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Macdonald, Alexander

Death in the mine;  
explosions in mines

Bowdon, Cheshire

1885

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Death in the mine; explosions in mines. Speech of Alexander Macdonald, esq., M. P. for Stafford, and the debate in the House of commons on Friday, June 21st, 1873. With an appendix by Ellis Lever. Bowdon, Cheshire. Reprinted for Ellis Lever, 1885. cover-title, 41 p. 24 $\frac{1}{2}$  cm.

JOURNAL OF PARLIAMENTARY

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DEATH IN THE MINE.

EXPLOSIONS  
IN MINES.



SPEECH OF  
ALEXANDER MACDONALD, ESQ.,  
M.P. FOR STAFFORD,

AND THE

*DEBATE in the HOUSE of COMMONS*

On FRIDAY, JUNE 21st, 1878.



WITH AN APPENDIX

BY

ELLIS LEVER.

REPRINTED FOR  
ELLIS LEVER, CULCHETH HALL, BOWDON, CHESHIRE.

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1885.

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## DEBATE IN THE HOUSE OF COMMONS,

Friday, June 21st, 1878.

Mr. MACDONALD rose to call attention to the appalling frequency of disasters in mines, and to move that—

"Inasmuch as the history of mining disasters during the last twenty-seven years proves that many of them have resulted from the culpable neglect of well-known provisions in Acts passed for the safety of those employed in mines, it is expedient that the Government should at once take steps to see that the inspection ordered by the Mines Acts of 1872 be rigorously enforced. That should the powers contained in the above-named Act be insufficient to meet the necessities of all cases, the Government ought to introduce without delay a measure that will."

MR. SPEAKER,

Sir,—Before entering upon the discussion of the subject or resolution of which I have given notice, I think it is due to myself, and to the House, that I should give some explanations as to my reasons for urging the matter on the attention of Parliament. I do this the more readily as I have no doubt that during the course of this debate or discussion that it may be alleged I speak on a subject that I do not understand. It may also be asserted that my object in bringing such a motion forward is to obtain a little popularity among the electors of Stafford, who so generously returned me to Parliament, or as member of this House, in the election of 1874. In respect to this latter, let me say that, so far as is known to me, there is not one connected with mines in the constituency of Stafford: certainly there is not one who is an elector who is engaged in the occupation of a miner.

Now, as to my experience. It was my lot to be taken into the mine in my eighth year. It was my fortune, or misfortune, to learn practically the hazardous nature of the miner's employment. The condition of the miner and the miner's child was certainly not then what it is now. When I entered the mine no Ashley had stretched forth his hand asking the Legislature of the country to spare the miners' children; no voice had been raised to declare it a wrong to take down the miner's daughter to the slavery of the mine; no cry had been raised to ask anyone to prevent the boys from being taken into the mine at five years, at six, or any other age; nor was there any law made affecting the miner's health, or for the protection of his life. In Scotland the miner had not been—and when I say the miner I mean his wife, his children, and himself—they had not been forty years free from slavery. In following the occupation of a miner I have seen and had some experience of the fire-damp explosion. I have seen, and was employed for years, I may say, among the enervating and life-destroying "black-damp," "stythe," or the deadly carbonic acid gas. At this moment I suffer from the effects of that dire agent which has given to so many of the mining population the hectic flush, the intermittent cough, that prolonged weariness which ultimately succeeds in closing the earthly career of those that suffer from it.

From the moment I ceased to be a mine-worker till the present, now something more than a quarter of a century, I have never ceased to take the most active interest in mines and in the miner's condition. Entering mines, studying every projected improvement, carefully noting all that related to the disastrous explosions, and other accidents that have so frequently startled and appalled the nation, I have made myself familiar with every improvement that has been made for the safety of the miners in the Continent of Europe. I have travelled much in the United States, and one of the objects that I have ever held in

view while there has been to learn the condition of the miner's employment, so far as his safety is concerned. In the face of such an experience I will venture, humbly, Sir, to affirm that I at least ought to be able to speak with some degree of knowledge as regards the mining operations of this country.

It is not the first time that discussions have been raised regarding mines and miners in this House in this century. On a motion made, an inquiry was granted in 1835; a select Committee was granted in 1839. In 1842 a Bill was passed through both Houses of Parliament, which expelled the females from the mines, which contained a provision prohibiting boys from entering mines until they were ten years of age. By the provisions of the Act a Commissioner was empowered to see if its provisions were carried out. There were Committees and inquiries in 1844 and 1849. In the year 1850 a Bill was brought into the House, which ultimately became law or was embodied into an Act of Parliament, and which, for the first time, created Inspectors, giving them power to visit mines to see if they were being conducted in a manner so as to promote the health and the safety of those employed therein. The powers granted by the Act of 1850 to the Inspectors to see that everything was done that could be for the protection of miners and others was so comprehensive that they virtually have had no enlargement or have undergone no change up to the present time. The Bill of 1850 had no sooner come into operation than it became quite apparent to all interested, in respect to the welfare of the miners, that it was inadequate, and failed to meet the requirements of the case.

#### BILL OF 1855.

As I have already stated, inquiries were demanded, the result of which was that in 1855 a Bill was introduced by the Government, and before the close of the session it became law. This Act contained certain general rules. They were seven in number. The first and most important of these was the declaration, "that the gas in all coal-mines should be diluted and rendered harmless, so that the working-places should be in a fit state under ordinary circumstances to work and travel therein." From that moment, as I see it, every explosion became a crime. It was declared by that same enactment, "that all coal-mines could be ventilated;" could be made safe, if only due care and attention were given to them. By the Act of 1855 another most important provision was made, and that was that the owners of mines should have the power to frame special rules for the government of the mine, defining the conduct of the various workmen "in a manner best calculated to promote the safety of those employed therein." These special rules were to have the sanction of the Secretary of State, and when they had received such sanction, they became law, as much as the clauses that were contained in the Act itself. A violation of these rules had attached to them a penalty of £2 or two calendar months' imprisonment, with or without hard labour, according to the opinion of the judge who might try the case. It will be observed then—and this is my contention—if there was an accumulation of gas in any of the coal-mines, unless under some extraordinary circumstances, during the existence of the Act of 1855 it was a violation of the law. If the workmen did anything reckless, or committed acts that were calculated to endanger human life, if these acts were not met by provisions in the special rules, the fault lay with the employer or the owner of the mine in not having his rules made to meet every case. If men were not punished for breaches of the rules, the fault lay with those in the management of the mines.

#### ACT OF 1860.

Important as the Act of 1855 was in the history of mining legislation, it soon became evident that its provisions were inadequate, and the legislation, to be beneficial, ought to be yet further extended. Before the close of 1856 a vigorous

agitation was commenced among the entire mining districts, which had for its object an extended Mines Bill. The Government became pressed with the necessity of such, and in 1860 a Bill was brought in under the auspices of the then Government of that day. The Act of 1855 contained seven important general rules, which every colliery owner was bound under a penalty to see carried out. The Bill of 1855 contained fifteen, all of which rules were imposed upon the owner to carry out. The Bill, however, did not only contain provisions in respect to safety and protection, but it had provisions for the education of the miner's child; it struck at the unjust or inequitable mode of weighing the miner's material—or, rather, of not weighing it—making the miner dependent on the whim or the caprice of the employer or his servants for the remuneration they were to obtain for their work. It also contained a clause which to some extent was an improvement on the Truck Act of 1832. During the discussion of the Bill in its various stages in the House of Commons, suggestions were made by the representatives of the working miner to members of the Legislature, which made their appearance in amendments in favour of double shafts, the necessity of managers of mines having certificates, the need there was for a thermometer and barometer at every mine to indicate the state of the atmosphere, the necessity of fully fifteen more general rules to be carried out for the safety and protection of the men. These, I regret to say, were rejected, and that, too, on a very old plea, and one which at the same time is heard at the present moment, viz., that the restrictions we were asking to place upon the mining interest of the country would have the effect of driving capital away into other countries, and the legislation would have, in fact, an injurious tendency on the condition of the workmen. The Bill, after a very protracted struggle in the Houses of Parliament, became law. When it did so, it contained all the provisions that were in the Act of 1855, as regards the framing of special rules, also as regards the ventilation to be maintained under ordinary circumstances, so good that the gas was to be diluted and rendered harmless, so that the roads and mine would be in a fit state for passing and travelling therein; and, I may here state, that, by a decision of one of the principal Courts, it was declared that the ventilation of the mine should be continuous—in other words, from the moment the mine was opened until it was closed, there was only one legal condition on which it could be carried on, and that was, that the gases should be diluted and rendered harmless continuously. There was another provision in the Act of 1860 that I should not omit to mention, which was that it should be extended to ironstone mines of the coal measures. Personally, I had seen the deleterious effects that were produced upon the constitution of those that worked in such mines in Scotland and in other parts of the United Kingdom. Our contention had ever been that inspection should apply to all mines; the arguments we were met with always were, that the ironstones and other mines contained no fire-damp, and, therefore, they ought not to be legislated for. It need only be said that, although this was gravely stated by those representing the owners, that there was no gas in the ironstone mines, it was simply untrue.

#### ACT FOR DOUBLE SHAFTS OF 1862.

What we failed to accomplish in 1860, on the ground of it harassing trade or mining operations, was accomplished in 1862. The Hartley disaster took place in that year; there can be no doubt that, had there been a second shaft, the most, if not the whole, of the persons whose lives were lost would have been saved. It was not so, and nearly 200 persons were hurried into eternity. A short Act was introduced that year, and two shafts was made a necessity by Act of Parliament.

#### AGITATION FROM 1862 TILL 1872.

Notwithstanding the increased provisions for safety by the Acts of 1860 and 1862, the loss of life was so great that it continued to attract more or less public

attention. Especially did it become apparent to the miners that the legislation was insufficient. In 1863, they were again petitioning Parliament for an alteration in the law. They based their demand on the alarming frequency of the loss of life in the mines. They prayed, if the Government would not introduce a Bill, that a Select Committee, or a Royal Commission, should be appointed to take evidence, and frame a report thereon. After strong manifestations on the subject a Select Committee was appointed, which sat during the larger portion of the Session of 1866 and 1867. A large number of witnesses was examined. Many of these supported the views of the miners, while, on the other hand, a large number, including managers of mines and inspectors who, for the most part, declared that no alteration in the law was needed. A report was drawn up by the Committee, however, that clearly pointed to the necessity for some alteration in the then existing law. From 1867 to 1872 several Bills were introduced, with the view of giving effect to the recommendations of the Select Committee. They, however, were not persisted with, and in common with the fate of many an excellent measure, were found among the "innocents" at the end of the session.

#### BILL OF 1872.

At the opening of the Session, in 1872, the then Right Hon. Henry Austen Bruce, now Lord Aberdare, brought in a Bill on the part of the Government to deal with the whole subject of the regulations necessary to safely carry on mines. The Bill was certainly greatly in advance of anything that had before been laid before Parliament and the country. An alteration was proposed in regard to the first general rule; instead of the words "ordinary circumstances," the words "reasonably practicable" were placed in their stead. As I see it, the rule was strengthened by the amendment, and not weakened. General rules for the protection of the men and safe conduct of the mine were increased from 15 to 32. Increased precautions and restrictions as to the use of blasting-powder were introduced. The law relating to the use of safety-lamps and to the presence of fire-damp, was, I may say, almost totally changed; that change was strengthening of the provisions for protection to those employed in mines. An all-important provision was also added, one that had been long contended for, which was "that the manager of a mine should have a certificate granted to him, either on account of his competency to be a manager or for the services he had rendered as such before the proposed condition of employment for the managers. The powers of the owners to make special rules for the "discipline of the mine" was greatly increased. It is not too much to say while here, that the provision in itself was, I think all that could be desired. There was also in the Act that most important clause—the 60th—which stated that if anyone, be he employer, manager, or agent of a mine, should he or they bring about a state of things that was likely to cause a dangerous accident, they should be sent to prison for three months with or without hard labour. The Bill became law, and I feel justified in declaring, what I am about to assert is believed in by thousands, nay, tens of thousands, of working miners, that was that Act, which came into operation on the 1st January, 1873, fully carried out that an explosion in mines, or dangerous accidents which destroy a large number of lives, would be all but impossible. Honour to the men who aided in getting the Acts passed that I have named. I think it but proper here to state, that though demonstrations may not have been great, there was a deep sense of gratitude pervading the minds of the mining population for the work done on their behalf. To mention some of these, I think, would not be out of place. Mr. Hutchins, Mr. Caley, and Mr. Ferrand deserve an honourable mention. Sir George Cornwall Lewis, in passing the Bill of 1860, was entitled to the highest thanks. To his name we ought to mention that of the Right Hon. A. S. Ayrton; Mr. Neate, the late Member for Oxford; the hon. baronet, the Member for North Durham; the noble lord, the Member for Haddington, whom I now see in his place, and whose name will be long mentioned with honour and respect among the

mining population after he has passed away: the then Mr. Bruce, now Lord (Aberdare); I have yet to add to the list the names of those who are in another place who did noble work for the miners and their little ones. I refer with gratitude—heartfelt gratitude—to the noble Earl Shaftesbury, who, for over forty years, has stood the miners' friend. I feel bound to mention, and mention with respect, the name of the late noble Lord Kinnaird, who assisted so materially the passing of the Act of 1860, who procured the appointment of a Royal Commission to inquire into the condition of the workers of the metalliferous mines of this country; who, more than once, brought in a Bill for the protection of that important section of the mining community, and watched with such keen interest the Coal Mines' Regulation Bill of 1872; the Metalliferous Mines' Bill of 1872, both with so great care and anxiety, till they became law.

#### HAS THE LEGISLATION BEEN BENEFICIAL?

Before proceeding further, I think it proper to ask the question? Whether the Legislation has been of a beneficial character or not? Having asked the question, I feel no hesitation in answering it, and the answer is, that every one of the Acts that I have referred to has had a tendency to increase the security of human life. Much as I condemn the present form of carrying out the Acts, I have no hesitation in saying that they have been of immense benefit. In 1850, or rather before it, the output of coal did not exceed 50,000,000 tons; the number of persons employed in the mines was little over 200,000; the deaths were a little over 1,000 a year; the persons injured for considerable periods exceeded 5,000 per annum. In 1877 the output of coal was 134,000,000 tons, the number of persons employed was at least double the number that were employed in 1850; the deaths in 1877 were little over 1,200; the persons injured were not likely to be more than 5,000. Had the rate of deaths been increased at the rate of the production of coal we must have had nearly 3,000 persons sacrificed in 1877, and the number of persons injured must have reached the enormous number of over 15,000 per annum. For these and other reasons which I could clearly advance I am satisfied that the legislation of 1842, 1855, 1860, 1862, and 1872, has been of a highly beneficial character.

#### THE DIFFICULTIES OF MINING.

Having made the admission that there has been a great improvement, else the deaths and injuries in mines would have been vastly increased, I have been asked if such a result is not perfectly satisfactory, and that by my own showing the Mines' Acts have worked well. Now, it is not with what has been done that I have any fault, my contention being that had the Acts been carried out strictly the results would have been far more satisfactory than that which I have admitted. I am told, also, that the difficulties of mining have greatly increased during the last quarter of a century—mines have been sunk deeper, new reservoirs of gas have been broached, water flood-gates have been opened of a character totally unknown in the experiences of the mining enterprises of the early part of this century. There is much truth in this, and I am free to admit it. While, however, I admit the full force of all the difficulties, I feel bound to state that as I see it mining knowledge has increased at least 100 per cent. during the last quarter of a century, or say in forty years; the care and skill has not kept progress with our knowledge, so that if only 25 per cent. of that knowledge has been applied—or 50 per cent.—in either case there is 75 per cent. or 50 per cent. which has not been applied, and the want of its application has produced results of a very disastrous character. As far as ventilation is concerned, take the old rude manner of ejecting water into the pit, the hanging of the furnace mid shaft to exhaust the gases, carbonic and carbureted hydrogen from the mines. The absolute want of knowledge how to make airways and fix appliances that lead to a healthy current at all times passing through the working



places. See now the powerful fan, the well-arranged airways, doors, drifts, the entire getting rid of the danger of furnace power wherever it exists; see, now, the skill in the apparatus for winding and to prevent dangerous accidents. The improvements can be seen in a thousand different forms were their application only thoroughly complete.

#### WOULD MINE-OWNERS IN THEMSELVES NOT MAKE IMPROVEMENTS EVEN FOR THEIR OWN INTERESTS?

Whenever a great mining disaster occurs and remarks are made upon it, the friends of the mine-owners, their organs, and they themselves, at once become loud in their declarations that it is the mine-owner's interest to have his mine well ventilated and all appliances complete. I admit this to be the case, it is their interest but with a portion of the mine-owners, history of mining accidents prove that it is not their practice, and I have found in my experience, and before I have done I will cite it as the experience of such Inspectors as the late Herbert Mackworth and Mr. Thomas Wynne, that the louder they are in their statements against the workmen being the cause of all disasters, the more reckless and foolhardy are those mine-owners and managers of mines themselves. I feel bound to say here that the mine-owners, if left to themselves, as a whole they would not make these improvements which are necessary for the safety of those employed by them, and I will venture to affirm that I am borne out in this by the finding of coroners' juries, from the reports of inspectors, and the history of the great mining disasters themselves. Let me guard myself here against being misunderstood. The charge of recklessness and neglect, the charge of want of applying all the knowledge we possess for the proper management of mines, I do not bring against the mine-owners, because I am aware that there are men, many of them—nay, I will admit, if you please, a majority of them—who are as humane, who are as generous, and who have as much real interest in the welfare of their workmen as any class of employers in the nation, or in the world. I could mention names by the dozen; this, however, would be invidious. The history of mining disasters moreover proves that they occur or take place with only a very small fraction of the employers. I must, however, again repeat that history and experience prove that most of the mining calamities have taken place, whether they be great explosions, shaft accidents, inundations, through recklessness and want of attention to well-known rules for human safety.

In dealing with this subject, or in proving my case, I may trespass to a considerable extent upon the time of the House. I will have to read largely from the Inspectors' reports that have been published during the last twenty-seven years. The opinions therein expressed, the findings made by juries, are not my opinions, they are the opinions of Government inspectors, they are the opinions of juries drawn from the ranks of our fellow-countrymen; men in whom we confide to investigate the whole subject, and on their statements I will rely.

#### LIST OF COLLIERY EXPLOSIONS, &c.

NAME OF MINE.	DATE OF EXPLOSIONS.	NUMBER KILLED.	REMARKS, OR VERDICT OF JURY.
Lletty Shenkin Colliery, Wales. (L.)	Aug. 10 1849.	52	Mr. Blackwell, who attended the inquest, cautioned the proprietors of the colliery of the state into which the colliery had been brought by employing an ignorant manager.—Mackworth's Report, 1854.
Warren Vale, South Yorkshire. (L.)	Dec. 20, 1851.	52	We would ill-discharge our duty if we did not accompany our verdict with our strong disapprobation of the loose manner in which the works seem to have been carried on.—Verdict of the Jury.
Nitshill Colliery, Scotland.	1852.	61	Want of internal stoppings allowed the air to pass straight to the up-cast shaft, and the men were permitted to begin work without the examination of an overman.—Ins. Dunn.
Killingworth Explosion.	1852.	9	During the investigation it came out that the ventilation was much deteriorated by the wetness of the up-cast shaft.—Ins. Dunn.
Washington Colliery.	1852.	28	The ventilation had been bad for several weeks, in so unsatisfactory a state that several persons had left their work.—Ins. Dunn.
Hebburn Colliery.	1852.	23	A single board, 27 yards long, becoming foul from neglect of a door, is supposed to have caused the disaster.—Ins. Dunn.
Guindreath Colliery, South Wales.	1852.	27	Hole into water; were no bore-holes to discover the exact position of old workings. That there should not have been bore-holes showed a lack of interest in the welfare of the workmen.—Ins. Dunn.
Middle Duffryn, South Wales.	1852.	68	Mr. Blackwell, after a previous explosion, had made certain recommendations, not one of which were attended to. The mine demanded more ventilation than 25,000 cubic feet per minute.—Ins. Dunn.
Cowpul Colliery. (7.)	1852.	36	No ventilating power was employed. There seems to have been no order or regulation.—Ins. Dunn.
Blaengwarr Colliery, South Wales.	Feb. 12, 1853.	2	Arsing chiefly from the want of sufficient ventilation.—Ins. Mackworth.
Risca, Wales.	Mar. 12, 1853.	10	Evils remain in this colliery that had existed at an explosion seven years before. It is common to attribute accidents to the faults of the workmen when the system of a colliery or the provision against accidents have been palpably neglected.—Ins. Mackworth.
Old Park, Dudley.	April 26, 1853.	11	No account how it happened, but hopes the loss of life will be further diminished.—Ins. Wynne.
Bent Grange, Oldham, Lancashire.	July 1, 1853.	20	I may remind your Lordship that prior to the explosion I had directed the proprietor's attention to the defective state of the ventilation, which resulted in my placing him under notice, as required by the Act.—Ins. Dickson.
Lletty Shenkin Colliery, Wales.	Sept. 15, 1853.	3	Could not have taken place if the Inspector's advice to the manager had been attended to. Had placed a man of no experience, quite incompetent to be entrusted with 180 lives, in one of the most dangerous collieries in England.—Ins. Mackworth.
Carried forward	...	402	

NAME OF MINE.	DATE OF EXPLOSIONS.	NUMBER KILLED.	REMARKS, OR VERDICT OF JURY.
Brought forward	...	402	
Ince Hall, Wigan.	1853.	58	Unfortunately discipline had been lax. Important rules broken with impunity.—Ins. Dickinson.
Ince Hall, Wigan.	Feb. 18, 1854.	89	On the first of these discipline appeared to be so lax that the result was what might have been expected. Caused by the use of naked lights and blasting powder, and the complicated arrangements for ventilation.—Ins. Dickinson.
Newmarket, Wakefield.	Nov. 11, 1854.	6	Lack of ventilation.—Ins. Dickinson.
Lundhal Colliery, near Earnley.	Mar. 15, 1854.	6	Blamed the contractor for not using the means at his disposal for ventilation.—Ins. Dickinson.
Aberaman, Aberdare.	April 13, 1855.	5	Burnt and suffocated by an explosion of fire-damp, caused by naked lights in pillar workings. No rules. Inspector's cautions neglected. In his general report the Inspector says:—I have frequently remarked the more ill-managed the colliery, the more frequently are accidents set down by the managers to the recklessness of the colliers.—Ins. Wynne.
Old Field, Longton.	May 25, 1855.	7	I am therefore led to the conclusion that his life and the life of others was sacrificed through an entire want of knowledge on the part of the manager of the principles of ventilation.—Ins. Wynne.
Pick-Shares Level, Blaencou.	April 15, 1856.	5	Violation of special rules on part of owners.—Report, 1856.
Cwm-Avon, Port Talbot.	May 24, 1856.	12	If the special rules, says the Inspector, which ought to have been established at this colliery, had been attended to, in all probability the accident would not have happened. The Inspector proceeded against the Company, and had them fined for neglect.—Report, 1856.
Gettigrave, Newport.	June 27, 1856.	11	Want of ventilation. The owner neglected to comply with the Act.—Ins. Mackworth.
Coal Brook Vale.	July 3, 1856.	12	Explosion of firedamp, violation of rules for adequate ventilation, constant supervision, no single main doors, no lock safety lamps.—Ins. Mackworth.
Cymmer Colliery, Cardiff.	July 15, 1856.	114	The explosion and its consequences are attributable to the following defect, viz., want of ventilation. The jury returned a verdict of manslaughter against the manager and overman and three firemen.—Report, 1856.
Ramrod Hall Colliery.	Aug. 13, 1856.	11	Caused by the absence of artificial means to produce a current of air. Mr. Wynne, who also examined it, says:—Certainly a more melancholy exhibition of incapacity and recklessness in the management of mines was never brought to light.—Report, 1856.
Lundhal, near Barnsley.	Feb. 19, 1857.	189	Several defects in the ventilating arrangements.—Ins. Morton.
Shipley near Derby.	March 4, 1857.	8	The ventilation was defective.—Ins. Hedley.
Ynisieu Rhondda.	Mar. 18, 1857.	4	Had ordinary precautions been adopted, the explosion would never have occurred.—Ins. Evans.
Bredbury, Stockport.	April 11, 1857.	4	Without an adequate amount of air to ventilate rise workings. Were proceeded against and heavily fined.—Ins. Wynne.
Hindley Collieries, near Wigan.	May 26, 1857.	9	Could not say how the gas accumulated. Want of ventilation.—Ins. Higson.
			[Mystery always means, as I see it, a blind to cover faults.]
Cwmelery Colliery.	May 27, 1857.	13	Want of ventilation.—Ins. Wynne.
Carried forward	...	965	

NAME OF MINE.	DATE OF EXPLOSIONS.	NUMBER KILLED.	REMARKS, OR VERDICT OF JURY.
Brought forward	...	965	
Tyr Nicholas.	May 27, 1857.	13	The Owner neither established the special rules allowed by the Secretary of State, nor carried out the precautions.—Ins. Mackworth.
Heys Colliery, Ashton-under-Lyne.	July 31, 1857.	40	Cannot say how gas accumulated, thinks it came out of an old working.—Ins. Dickinson.
Ripley Colliery, near Derby.	Oct. 10, 1857.	6	Want of proper precautions. Fined in court for neglect of rules.—Ins. Hedley.
Hollingwood Colliery.	Nov. 15, 1857.	10	Suffocated by choke-damp. Want of ventilation. Imperfectly worked.—Ins. Hedley.
Barsley Colliery.	Feb. 2, 1858.	53	Supposed defective ventilation.—Report, 1858.
Lower Duffryn, Aberdare.	Feb. 25, 1858.	19	The air, after ventilating the colliery, passes along it. This, in my opinion, is most objectionable.—Ins. Evans.
Machin, Newport.	April 26, 1858.	4	Mode of airing those steep stalls was by fans or blow-georges. Probably the gas by this means was blown on to a naked candle.—Ins. Brough.
Dryndhu, Tailback.	May 29, 1858.	12	This is a locked-lamp colliery, and in my opinion blasting powder ought not to be allowed. It is a crime to blast where gas is.—Ins. Evans.
Cyffing, Swansea.	Aug. 11, 1858.	6	No examination at the works, and inadequate ventilation. Penalty of £40 inflicted.—Ins. Evans.
New Tredegar, Bedwelly.	Sept. 11, 1858.	3	Gas had accumulated in consequence of a door being left open.—Ins. Brough.
Pagebank.	Oct. 1, 1858.	11	Brattice-cloth set fire to. Can't be told how.—Ins. Atkinson.
Tyldesley, Leigh.	Dec. 11, 1858.	25	The intake air was unskillfully passed through some goaves, and ventilation was defective.—Ins. Dickinson.
Byears Colliery, near Burslem.	Jan. 29, 1859.	5	Took place in consequence of a large accumulation of gas in old workings.—Ins. Wynne.
Mesty-Croft, Wednesbury.	Feb. 12, 1859.	4	Explosion of sulphur in main air-course.—Ins. Loungridge.
Hayside, Radcliffe.	Sept. 26, 1859.	3	Inadequate ventilation.—Ins. Dickinson.
Washington Pit.	Oct. 22, 1859.	4	Owing undoubtedly to the deficiency of air.—Ins. Dunn.
Burradon Colliery.	Mar. 3, 1860.	76	A deficiency of ventilation. The men had frequently complained to the Inspector.—Ins. Dunn.
Winstanley, Wigan.	Aug. 3, 1860.	13	The ventilation seemed scarcely adequate to dilute even a moderate quantity of explosive gas. The distributing of the air through the working-places was of the rudest and most primitive description.—Ins. Higson.
Lower Duffryn, Aberdare.	Nov. 9, 1860.	12	The brattice is not kept near enough to the stalls, and the air-ways are small in places.—Ins. Evans.
Black-Vein, Risca.	Dec. 1, 1860.	142	The Jury recommended that the special rules be revised and amended.
Hetton Colliery.	Dec. 20, 1860.	22	Supposed to have exploded on the flue.—Ins. Dickinson.
Brereton, Rugely.	Feb. 6, 1861.	7	The Jury declared the pit not properly ventilated, subsequently the general mine manager, for violations of the rule, was severely fined.—Ins. Baker.
Laingshaw, Worsley.	Feb. 27, 1861.	9	A fireman dislodged the gas while the men were at work, and the safety lamp being uncovered it exploded, and the nine persons were killed.—Ins. Dickinson.
Blaengwaur, South Wales.	Mar. 8, 1861.	13	Believing the explosion occurred from the non-observance of the general rule, there was not sufficient ventilation to dilute and render harmless the gas. On the direction of the Secretary of State I took proceedings against the owner.—Ins. Evans.
South-Mostyn, Wales.	Sept. 26, 1861.	6	Cannot be ascertained.
Carried forward	..	1,483	

NAME OF MINE.	DATE OF EXPLOSIONS.	NUMBER KILLED.	REMARKS, OR VERDICT OF JURY.
Brought forward	...	1,483	
Shevington Colliery, Lancashire. (5.)	Nov. 1, 1861.	13	The jury, on returning their verdict, did not neglect the opportunity of expressing their regret at not being able to reach the management with anything beyond a severe censure for the negligent manner in which the ventilation was conducted.—The Jury.
Cethin Colliery, South Wales.	Feb. 19, 1862.	47	We find that the ventilation of No. 1 Cethin Pit was deficient in quantity, badly arranged, and liable to frequent interruption; that the viewer disregarded the first general rule, and also permitted the Special Rules Nos. 16, 18, 24, 26, 31, 34, 37, and 67 to be generally disregarded by his officers, and we find a verdict against the manager.—The Jury.
Edmund Mine Colliery. (2.)	Dec. 5, 1862.	59	The Jury expressed their opinion the explosion was owing to the incautions and unsafe way of taking care of the door gates; was highly injudicious and dangerous. At the second inquest the Jury found that the explosion was caused by directions given by Joseph Mitchell, the managing partner.
Cockshott Colliery.	Mar. 6, 1863.	26	This dreadful affair, says the Inspector, was caused from want of caution on the part of the employers, who permitted naked lights to be used simultaneously while they were taking out pillars.—Ins. Dunn.
Morfa, Wales.	Oct. 17, 1863.	39	Accumulation of gas. A violation of the law.—Ins. Evans.
Ruabon Colliery, North Wales.	Dec. 9, 1863.	13	Cause of explosion, accumulation of gas and the firing of a shot.—Ins. Higson.
Leewood, near Mold, North Wales. (4.)	Dec. 5, 1863.	8	Influx of water. I may say that bad management below ground was sufficient to convince me that the manager had not paid attention to his business.—Ins. Higson.
Brook House, Hanley. (1.)	Mar. 2, 1864.	5	The commonest foresight would have prevented this accident.—Ins. Wynne.
Clough Hall and Brookhouse Collieries.	Mar. 1, 1865.	5	To allow men to work and to fire shots was perfect madness.—Ins. Wynne.
Clay Cross Colliery, Chester field.	May 3, 1865.	8	I believe that gas did come off at this point, and the ordinary ventilation was insufficient to dilute it to the safety point.—Ins. Evans.
Tredegar, Monmouthshire.	June 16, 1865.	26	There was plenty of ventilation not sent in. It did not explode for want of air, but for want of sending it in. It was a want of seeing the general rules carried out.—Ins. Brough.
Brookhouse Colliery, Hanley.	Nov. 29, 1865.	3	This accident is the most inexcusable, as five lives were lost on the 2nd March, 1864, in the same pit by the same means. Surely it is not saying too much in asserting that good management would have prevented this.—Ins. Wynne.
Cethin Colliery, Merthyr Tydfil. (5.)	Dec. 30, 1865.	34	I need hardly add that the powerful facts which have been elicited in this inquiry present a sad picture of the utter want of even ordinary care in regard to the use of safety lamps, lamp-keys, or contrivances for opening lamps, lamps unlocked having been found in the pockets of several of the unfortunate sufferers in the sad calamity.—Ins. Wales.
Park Lane, Wigan.	Jan. 23, 1866.	30	The reason of the explosion of the gas is not known.—Ins. Higson.
Jackfield, Burslem.	April 6, 1866.	4	This explosion of fire-damp was caused by gross neglect in not distributing the air, and also relying on the Davy lamp for safety, than on good, healthy ventilation.—Ins. Wynne.
Carried forward	...	1,803	

NAME OF MINE.	DATE OF EXPLOSIONS.	NUMBER KILLED.	REMARKS, OR VERDICT OF JURY.
Brought forward	.. ..	1,803	
Garwood, Wigan. (3.)	May 4, 1866.	12	Obstruction in the ventilation.—Ins. Higson.
Outwood Colliery, near Manchester.	May 8, 1866.	3	Defective and ineffective ventilation.—Ins. Dickinson.
Buxton Pit, Dowlais.	May 29, 1866.	4	I am of opinion that no doors had been neglected, and that either from the obstruction at the bottom of the up-cast shaft, or from some other cause. The air had become gradually reduced in quantity until too weak to dilute or carry off the gas exuding from the coal. On my examination of the colliery, I found the ventilation weak, and the arrangements generally most defective. The overman in charge of the pit was totally ignorant of his duties and the responsibilities attaching to his position.—Ins. Wales.
Victoria Pit, Dukinfield.	June 14, 1866.	38	The Jury wished to state their opinions that the general management of the pit was characterised by great negligence and incompetence, but not sufficiently gross to fix the manager with criminal responsibility.
Pelton, Chester-le-Street.	Oct. 31, 1866.	24	We are of opinion that negligence had been manifested on the part of the employers in not enforcing the rules, and also on part of the miners in not carrying them out.—The Jury.
Oaks Colliery, Barnsley.	Dec. 12, 1866.	361	There was no evidence to prove how the gas ignited. We think, with the view of a better protection of life, a more strict inspection is necessary.—The Jury.
Talke-o'-the-Hill Colliery. (6.)	Dec. 13, 1866.	91	We cannot too strongly urge upon the Government the necessity of appointing additional inspectors of mines.—The Jury.
Lower Dufryn, Aberdare.	May 2, 1867.	3	Where the explosion occurred shot-firing was permitted, and to which unquestionably the sad accident now under investigation is to be attributed.—Ins. Wales.
Meine Lea, Worsley.	May 30, 1867.	7	Ventilation defective.—Ins. Dickinson.
Fenton Park, Stoke.	June 13, 1867.	2	The negligence of both the chartermaster and manager was considered so culpable by the Coroner's Jury that both were sent for trial.—Ins. Wynne.
Garwood Park, near St. Helen's.	Aug. 20, 1867.	14	It was manifest that a quantity of gas had been negligently suffered to accumulate there by Winstanley not having maintained the efficiency of his brattice, and that it was ignited by the firing of his shot.—Ins. Higson.
Beray Hill, Hanley.	Nov. 6, 1867.	3	Proprietor was fined for defective ventilation.—Ins. Wynne.
Ferndale, Pontypridd.	Nov. 8, 1867.	178	In consequence of a large accumulation of gas, and this accumulation we attribute to the neglect of Mr. Williams, the manager, we are of opinion that the inspection of collieries as hitherto practised has entirely failed as a preventive to accidents of this kind, and we recommend that all collieries should be henceforth inspected by a competent person at least once in every three months.—The Jury.
Silverdale, Newcastle. (7.)	Nov. 9, 1867.	3	Was owing to the want of judgment in laying out the workings of the mine.—Ins. Wynne.
High Brooks, Park Lane, Wigan.	April 1, 1868.	37	Accumulation of gas, ignited from the firing of a shot.—Ins. Higson.
Oldfield Colliery. (2.)	July 7, 1868.	2	From shot-firing and defective ventilation.—Ins. Brough.
Carried forward	.. ..	2,590	

NAME OF MINE.	DATE OF EXPLOSIONS.	NUMBER KILLED.	REMARKS, OR VERDICT OF JURY.
Brought forward	...	2,590	
Haydon, St. Helens.	July 21, 1868.	59	Explosion of gas, cause unknown, but must have been accumulation.—Ins. Higson.
Swan Lan Colliery	Aug. 17, 1868.	3	A conspicuous absence of discipline of the works, and the management was defective. Tried and fined £5.—Ins. Higson.
Wynnstay Colliery.	Sept. 30, 1868.	10	Accumulation of fire-damp. How it exploded cannot be said.—Ins. Higson.
Low Hall, Wigan.	Nov. 15, 1868.	27	Firing of shots, and other unknown causes.—Ins. Higson.
Trevelad Hall, Trip-ton, Dudley.	Nov. 23, 1868.	2	Accumulation of gas.
Hindley Green Colliery.	Nov. 25, 1868.	62	Accumulation of gas and defective ventilation.—Ins. Higson.
Morley Colliery.	Dec. 21, 1868.	8	Here, again, as at Wynnstay and Hindley Green Collieries, careful supervision was neglected.—Ins. Higson.
Haydock Colliery.	Dec. 26, 1868.	26	Explosion of fire-damp. Gas accumulated in the place where nobody was working. How it exploded nobody can tell.
Springwell Colliery, Low Man.	Jan. 29, 1869.	6	Lack of boarding and being improperly put up.—Ins. Southern.
Woodshot Colliery.	Feb. 10, 1869.	4	Shows that lax of discipline will sooner or later lead to serious consequences.—Ins. Wynne.
Inyrydd Newydd Colliery.	Mar. 26, 1869.	3	Accumulation of gas and want of ventilation.—Ins. Wales.
Cwmautha Colliery.	May 25, 1869.	7	This explosion was caused by a blower.—Ins. Brough.
Ferndale Colliery.	June 10, 1869.	53	We are of opinion that the air was not properly distributed over the pit, and the airways were not properly attended to.—The Jury.
Newbury Colliery, Somersetshire.	Oct. 27, 1869.	11	Accumulation of fire-damp.—Verdict of manslaughter against three persons in charge.—Ins. Brough.
Henderforan Colliery.	Nov. 11, 1869.	6	Verdict returned, and recommended the Inspector's instructions should be carried out, and the owner was severely condemned for entrusting the management to an incompetent person.—Ins. Wales.
Pendleton Wigan.	Feb. 4, 1870.	30	Gas not properly diluted and rendered harmless.—Ins. Wales.
Astley Deep Pit.	Mar. 4, 1870.	9	We are of opinion that Elijah Swain is not competent to have the sole management of such a mine as this. The persons have been killed by want of good management.—The Jury.
Vochrin Colliery.	Mar. 2, 1870.	3	Allowed gas to accumulate and it exploded.—Ins. Wales.
Silverdale Stafford.	July 7, 1870.	19	We are of opinion that the air-way was hardly sufficient for such a number of men working in the pit and we recommend that it should be enlarged.—The Jury.
Bryan Hall, Wigan.	Aug. 17, 1870.	20	Accumulation of gas which ought to have been removed.—Ins. Higson.
Lilleshall Colliery.	Oct. 24, 1870.	4	I am of opinion that if the commonest care had been exercised, these four lives would not have been lost.—Ins. Wynne.
Lycett, Newcastle.	Jan. 3, 1871.	8	Accumulation of fire-damp. The explosion was preventable.—Ins. Wynne.
Renshaw Chesterfield.	Jan. 10, 1871.	26	The deaths were accidental, but we recommend, at the same time, that stricter supervision should be rendered by the underviewers.—The Jury.
Pentre Colliery, Pontypridd.	Feb. 24, 1871.	38	We recommend that the suggestions of the Government Inspector be carried out.—The Jury.
Victoria Colliery, Monmouthshire.	Mar. 2, 1871.	19	Was purely accidental, but that any future spout-hole should be attended for the safety of human life.—Ins. Brough.
Carried forward	...	3,053	

NAME OF MINE.	DATE OF EXPLOSIONS.	NUMBER KILLED.	REMARKS, OR VERDICT OF JURY.
Brought forward	...	3,053	
Ince Moss, Wigan.	Sept. 6, 1871.	70	Explosion of gas.
Ince Moss, Wigan.	Sept. 20, 1871.	5	Explosion in consequence of the pit being in an explosive state, owing to the former explosion.—Ins. Higson.
Gadlys, Aberdare.	Oct. 4, 1871.	4	We recommend the Company to adopt the suggestions of the Government inspectors.—The Jury.
Black Shale Colliery, Lockford.	Oct. 21, 1871.	4	There was not sufficient ventilation.—Ins. Evans.
Seaham, Sunderland.	Oct. 25, 1871.	26	Explosion was caused by an outburst of gas.—Ins. Wardell.
Bartonholm, Killwinning.	Oct. 30, 1871.	4	Accumulation of fire-damp.—Ins. Alexander.
Hindley Green, near Wigan.	Nov. 15, 1871.	6	Blasting with powder.
Norwood, Chesterfield.	Nov. 22, 1871.	9	The general ventilation of the colliery appeared to me insufficient under ordinary circumstances.—Ins. Wynne.
Hook Colliery, Haverford West.	Nov. 22, 1871.	2	A fine of £20 was imposed on the manager for having the ventilation defective.—Ins. Wales.
Maestag Colliery.	Feb. 14, 1872.	11	Explosion of gas caused by the firing of a shot.—Ins. Wales.
Berry Hill Colliery, Stoke.	Mar. 12, 1872.	6	We strongly recommend the Proprietors to have their mine properly ventilated.—The Jury.—(Ins. Wynne).
Lover's Lane, Atherton.	Mar. 28, 1872.	27	The workings became foul in consequence of the space for air-passage being too small. We recommend that the inspectors' instructions be carried out.—The Jury.
Morley Colliery, Leeds.	Oct. 7, 1872.	34	The Jury came to the conclusion that it occurred through a large accumulation of gas in the goafs, but they consider that there has been carelessness on the part of some person or persons in charge of the workings, and they are of opinion that more care is necessary in the ventilation to clear away the gas that accumulates in these goafs.—Ins. Wardell.
Golden Hill, Longton.	Dec. 9, 1872.	3	We, as in the former case, strongly recommend the proprietors to have their mine properly ventilated.—The Jury.
Silverdale Colliery, Newcastle.	Dec. 21, 1872.	8	No verdict in the report, but seems to have been caused by mismanagement.
Hatton Colliery, Clifton, Bradford.	Jan. 12, 1873.	4	The explosion was caused by the building of a stopping, which was an error of judgment on the part of the deputy, caused by the carelessness of the deputy.—Ins. Wardell.
Talke Colliery, Newcastle.	Feb. 18, 1873.	18	We urge that more efficient firemen should be taken on by the North Staffordshire Coal & Iron Co.—The Jury.
Ivy House Colliery, Hanley.	Feb. 23, 1873.	2	So much culpable neglect was proved at the inquest against both the manager and the underlooker that the jury returned a verdict of manslaughter against them.—Ins. Wynne.
Sillery Colliery, Monmouthshire.	April 5, 1873.	6	If the doors had been closed there was wind enough to sweep away and render harmless all the gas that could possibly threaten the men then employed in this division of the colliery.—Ins. Brough.
Wynnstay Colliery, Ruabon.	Apr. 24, 1873.	7	We attach to our verdict a recommendation to the company to carry out the suggestion that has been made on us to having the holes examined before the powder is put in.—The Jury.
Carried forward	...	3,309	

NAME OF MINE.	DATE OF EXPLOSIONS.	NUMBER KILLED.	REMARKS, OR VERDICT OF JURY.
Brought forward	.. ..	3,309	
Denbigh Hall, Tipton.	May 29, 1873.	2	Had the air-pipe been carried through the scaffolds, and an adequate current of air sent through it, and also proper means adopted for its exit, the lamentable accident would, in my opinion, never have been heard of.—Ins. Baker.
Brym Hall Colliery, Wigan.	May 31, 1873.	6	We recommend that there should be more air-splittings so as to supply fresh air to the various districts, and to reduce the number of doors in the mine.—Ins. Bell.
Vauxhall Colliery, Ruabon.	June 23, 1873.	2	I consider the conduct of the fireman in leaving the mine to be censurable; he, knowing all the circumstances, ought to have remained and superintended the clearing out of the gas.
Chesterton Colliery, near Newcastle.	July 4, 1873.	2	Gas was known to exist in large quantities, but the management of the colliery was such that if the workmen themselves did not apprehend danger, there was no one to warn them against it.—Ins. Wynne.
Worcester Colliery, Swans a.	Aug. 29, 1873.	4	This case was duly reported to the Home Secretary, and proceedings were instituted against the manager for a breach of the First General Rule; and also against the fireman for a breach of the Sixth General Rule. The manager was fined £10 and the fireman 15s.—Ins. Wales.
Mesmes Colliery, Wigan.	Nov. 21, 1873.	7	Explosion of gas.
Hafod Colliery.	Dec. 2, 1873.	5	Explosion of gas owing to a lamp being improperly opened.—Ins. Bell.
White Barn Colliery, Newcastle.	Apr. 8, 1874.	2	Caused by negligence on part of the manager for not having properly examined the workings on the morning of the explosion.—Ins. Wynne.
Astley Deep Pits, Dukinfield.	Apr. 14, 1874.	54	That the primary cause of the explosion was the blocking up of the mouthings leading to the smithy mines. That this was an act of gross ignorance or a culpable negligence. The jury consider that there is distinct evidence as to the employment of incompetent persons and placing them in authority. The jury desire to express their strong opinion that the present system of inspection is inadequate.—The Jury.
Morley Hill Colliery, Wigan.	May 18, 1874.	4	The existence of gas in the mine was known to the proprietors, but they took no means to ventilate the mine.—Ins. Bell.
Ince Hall Colliery, Wigan.	July 18, 1874.	54	Caused by the firing of shots, the shot lighter having omitted to examine that place as it was his duty to do. He did not think it safe to have two shots in the one place under the present system.—Ins. Bell.
Ubberly Hall, Hanley.	Aug. 24, 1874.	4	Bad management on part of the proprietors, and an accumulation of gas.—Ins. Wynne.
Rawmar h Colliery, Rotheham.	Nov. 20, 1874.	23	That the deceased were accidentally killed by an explosion of gas in this colliery, and the said jurors further say that the recommendations of the coroner and the Government Inspector of Mines should be adopted and strictly adhered to.—The Jury.
Ogmore (Sinking) Bridgeend.	Dec. 7, 1874.	5	I have seldom met with a case where there had been such a thorough disregard of proper means for the safety of the men employed.—Ins. Wales.
Signal Hill Colliery, Newcastle (8).	Dec. 24, 1874.	17	Sufficient care not being exercised in the workings of the mine and the use of naked lights.—Ins. Wynne.
Carried forward	... ..	3,500	

NAME OF MINE.	DATE OF EXPLOSIONS.	NUMBER KILLED.	REMARKS, OR VERDICT OF JURY.
Brought forward		3,500	
Aldewarke Main, Rotheham.	Jan. 5, 1875.	7	The jury appended to their verdict the recommendation that a larger number of efficient deputies should be employed, and also referred to the manner in which the "Danger Books" had been kept.—The Jury.
Bunker's Hill, Kidsgrove.	April 30, 1875.	43	Defective mode of ventilation; unless this mode be checked, I fear a danger of explosion will arise which a better system, by means of brattice, would prevent.—Ins. Wynne.
Hafod-y-rich, Ruabon.	June 3, 1875.	3	Proceedings were instituted against the manager for a breach of No. 1 General Rule.
Mirfield Colliery, Mirfield.	July 1, 1875.	4	Proceedings were instituted against the manager for violation of the First General Rule. The Bench decided that the precautions which the Act of Parliament requires had not been taken, and a fine of £10 was inflicted.—Ins. Wardell.
Co. Liberty, Somersetshire.	Oct. 7, 1875.	4	Insufficiently ventilated.
Mew Tredegar, Monmouthshire.	Dec. 4, 1875.	23	I am compelled, therefore, to fall back, and I do so with very great diffidence, on the hypothesis of the damaged lamp (belonging to the owners) which has already been exhibited in this room.—Ins. Brough.
Llaw Colliery, Cardiff.	Dec. 6, 1875.	16	Neglect of airing caused this terrible explosion.—Ins. Wales.
Swaithes Main, Barnsley.	Dec. 6, 1875.	143	The Jury found that Thomas Blackburn, James Allen, and others, came to their deaths at Swaithes Main Colliery by explosion or explosions of fire-damp, but how such explosion or explosions originated there is not sufficient evidence to show. We are likewise of opinion that, according to the evidence, the Swaithes Main Colliery is a fiery mine, and that the General Rule and Special Rules have not been rigidly carried out. The Jury are also of opinion that in all mines alike, where safety-lamps are used, the use of the gunpowder should not be allowed, except on stone drifts.—The Jury.
Methley Junction, Normanton.	Dec. 9, 1875.	6	Explosions of gas caused by the use of naked lights.—Ins. Wardell.
Birley, Sheffield.	June 26, 1876.	6	Fireman neglected to thoroughly examine the heading before the men went to work. Fireman committed for manslaughter, and manager and under-viewer censured by Coroner's Jury.—Ins. Evans.
Stone Hill Colliery.	Jan. 23, 1877.	18	Jury could not agree as to whether the deaths were caused by an explosion or fire of brattice cloth.—Ins. Dickinson.
Fogg's Colliery, Darby Lever.	Feb. 7, 1877.	10	Large quantities of fire-damp, met with after the explosion, pointed to an explosion as the cause of the disaster.—Ins. Dickinson.
Annesley Colliery.	May 16, 1877.	8	Fault in the compressed-air pipes; set fire to coal; suffocated the men.—Ins. Evans.
East Cannock Colliery.	Aug. 31, 1877.	4	Explosion; founled doors left open.—Ins. Baker.
Blantyre Colliery.	Oct. 22, 1877.	209	Explosion; total failure of the ventilation. Commissioners.—Dickenson and McLean.
Home Farm.	April 13, 1877.	4	Inundation of water; water running in for a week. No precautions taken.—The Commissioners.
Tyne-wydd Colliery.	April 11, 1877.	5	Inundation; no precautions taken.
Weigfach Colliery.	Mar. 10, 1877.	13	Want of ventilation.—Ins. Wales.
Pemberton Colliery.	Oct. 11, 1877.	36	Explosion caused by firing a shot, "added to existing dangerous condition of the mine."—Ins. Hall.
Total	... ..	4,067	

## EVERY EXPLOSION A CRIME.

HAVING now given in detail, to a large extent, extracts from official records as to the cause of these disasters, and looking at the law, as it stood since 1855, as regards ventilation, that the mines' gas should be diluted and rendered harmless, and, further, with the knowledge that the Legislature did not impose this condition upon the employers without knowing that it could be carried out, I venture solemnly to affirm that nearly every great mining disaster has been a crime, as I see it, of the darkest kind. Every mine disaster which may yet occur will be so; and therefore it is that I claim—that I ask—the House, either to see the law that is now in existence carried out, or new provisions made that will meet the wants of the case. I again assert that, had the provision been carried out, which declares that the gases should be diluted and rendered harmless, not one out of the lives ought to have been sacrificed that have been by the neglect to carry out the provisions of the Acts up to 1872, and the Act of that year, and since.

### RECKLESSNESS OF THE WORKMEN.

WERO newspaper paragraphs to guide us as to the cause of every accident—I mean the general newspapers of the present day, and particularly such organs as claim to be the real representatives of the employers of Britain, and we are bound to assume it, as employers do not contradict their statements—every accident of a trifling or of a serious character has its origin in the recklessness, in the evil intention, and the malice, it would often appear, of the workmen. Before Select Committees, before Commissions, and in this House, this has been trumped up over and over again, on the authority of mineowners, of secretaries of mineowners, and mineowners' representatives. Now, Sir, I challenge every mineowner in this House, I challenge every secretary of the mineowners, I challenge every newspaper editor in the United Kingdom, hired organ, organs of capital, whose interest lies in that direction, because it pays, to point out to me, or to point out to any other one, if the gas had been diluted and made harmless, how an explosion could have taken place. I further challenge them to point out to me, or to anyone else, out of the long list of terrible disasters in the mines of this country, to show, from the reports or the opinion of Juries or Inspectors, that one per cent. of these were caused by the recklessness of the workmen.

I will take, further, during these twenty-seven years, the numbers of persons prosecuted for offences against the various Mines' Acts, against the special rules, against the orders of the employers, or their managers—we will take the history of the same period, and we shall take the prosecutions of that period against owners, managers, underlookers, deputies, and persons in trust, about the colliers, taking the miners man for man who have been convicted, and those connected with ownership and management who have been convicted. I will venture to assert, with perfect confidence, that the proved recklessness, the proved foolhardiness, the proved utter disregard to rule, and care for the welfare and protection of the mineowners' property, the lives of the workmen, that these convictions will show a thousand per cent. more recklessness on the part of owners, and those for whom they ought to be responsible, than by the reckless and foolhardy miner we hear so much of.

I go further, and ask, if there is recklessness in a mine, who is to blame? By the Act of 1855, the owner of every mine was empowered to make special rules for the special guidance of those to be employed in his mine; these rules were

to prevent dangerous accidents. By the Act of 1860, the same privilege was re-enacted, and additional powers were conferred on the mineowners in order that they might protect their property, of which we hear so much. By the Act of 1872, the same privileges were re-enacted with additional power; and here, I think, it is better to refer to the Act itself, to quote the words of the Act to show how much power mineowners have in this respect. The 52nd Clause of the Act says:—"There shall be established in every mine such rules (special rules) for the conduct and guidance of the persons acting in the management of such mine, or employed in or about the same, under the particular state and circumstance of such mine as may appear best calculated to prevent dangerous accidents, and to provide for the safety and proper discipline of the persons employed in or about the mine." These rules are to be framed by the owner; if, therefore, they are not of a character to prevent the use of the naked light where it is dangerous to use it, if they are not of a character that will prevent the taking into the mine the pipe, the match, which are known to cause, or may cause, most serious accidents, my contention is, that the recklessness is to be placed at the door of the mineowner, who has not made the rules sufficiently strong so as to put down any irregularity on part of the workman, any irregularity on part of those who carry out the intentions of those in charge of the mine, or the employers thereof.

Let it not be thought that I am here defending any act or anything done on part of the workman that may lead to serious accidents, that may lead to the destruction of one farthing's worth of property. I disclaim, and I deny, on the part of myself, on the part of the great mass of the intelligent working miners of the kingdom that they have any such desire. Personally, I say if mine owners break the law, let them be punished, and punished severely. If those who control the mine in the mine-owner's interest do what tends to create a dangerous accident, let them be punished according to the merits of their offence. If workmen are guilty of indiscretions, or wilful neglect, or recklessness which may tend to the destruction of property and of human life, then let them be punished most rigorously, only let the punishment be just and equal to all.

In discussing this question with large mineowners and others, it has been often said to me, when I have enunciated such principles, that it would require our mines, with such views, to be placed almost under a military regulation. My answer to that has been, and is now, if a military regulation, or, if a semi-military discipline is necessary for the protection of the lives of those employed in mines, then by all means let such be done with a knowledge that lives could be saved, that property would not be destroyed; with a knowledge that for want of proper rules, the country tolerates a wholesale destruction of life every now and then; then, I say, as I see it, mineowners and society are guilty of the most serious offence by tolerating that state of things to last even a day. I have been told, and I even may be told to-night, that such rules as would be necessary would interfere with the liberty of the subject. I deny that the subject, whether he be mineowner, mine manager, or miner has any liberty in the destruction of life. As I see it, no man, under any circumstances, ought to have a liberty, ought to have a power, if such power could be prevented, that he could even endanger the lives of his fellow-men in number of one, 100, or 500, in any sense at all.

Having thus shown that, as I see it, most of the terrible disasters have arisen from neglects in management, the question may now be asked why this is so? I venture to say that the principal cause of it lies in the fact that the existing inspection is, or, at least, has been to a great extent illusory. I will go farther, and say, that

### INSPECTION IS A FARCE.

A farce, moreover, that the country has to pay dearly for, and if it is not made more a reality that it has been, I, for one, would say, let it perish altogether.



As I understand the public mind, its view of inspection is, that inspectors should visit the mines, that they should see to it, that dangerous accidents should be averted. If I understand the Mines' Act at all, it contemplates that the inspector should visit the mine or mines to see that the Act is carried out, that its provisions are made operative. By the Act, under 45th Clause, they are empowered to enter, inspect, and examine any mine, to examine into and make inquiry respecting the state and condition of any mine, as to the ventilation of the mine, the sufficiency of the special rules, and all matters relating to the safety of persons employed in or about the mine, and this power they can exercise by night or by day. If they see anything, if they learn anything is being done in violation of the rules or provisions of the Coal Mines' Regulation Act, they have power to give notice to the owner, in writing, that such a state of things should be altered. If it is not altered then they are empowered to bring or adopt a prosecution against the employers for the violation of the Act. This is what the Act says, that is what public opinion says; but what does the inspector say? Mr. Joseph Dickinson, Chief Inspector, when examined before a Select Committee of this House, when asked what he thought was his duty under the Act, he answered, "that he did not think that it was their duty or his duty to visit a mine unless there had been an accident, or that he had been summoned by some one to inspect the mine." To those who were curious to learn the views of the mine-inspector on this subject, I would refer them to the questions 7439, 7440, at page 230 of the Report of the Select Committee of Mines, 1866. Mr. Wynne, in answer to question 14,238, which is to be found in the same report, at page 506, virtually says the same thing. Sir George Grey, when examined before the same Committee, said that the inspectors desired more an increase of salary than an increase of duty, in the direction of visiting mines.

#### WHC IS TO SUMMON THE INSPECTOR TO VISIT A MINE?

It is not likely the employer will; the experience of all the inspectors go to prove that a very small fraction of the miners will, they dreading, rightly or wrongly, the consequences of their being regarded officious. In proof of my allegation that the Mines' Act, or rather the inspection under it, is in some degree farcical, let me take the inspector's own statement in reference to accidents in

1873.

Mr. Wynne says, in his report on the Silverdale explosion, by which eighteen lives were lost, that there was gross culpable neglect. The jury found there was a want of firemen. Could not the inspector have discovered this? Mr. Bell found, at the Wynnastay Colliery, where several lives were lost, at least, the jury found, that his advice had not been carried out. Can there be anything more ridiculous than to have it said that the advice of the inspector was not attended with the powers he possesses? At Bryam Hall, the jury found more air-splitting necessary at this colliery. Could not the inspector have seen this before the lives were lost? Inspector Wales, reporting regarding the explosion at the Western Colliery, near Swansea, says, the cause of the loss of four lives was defective ventilation. In

1874,

Mr. Wynne reports on three accidents, in which there was a total of sixty lives lost. Of the first, the White Bar, he says the lives were lost by the negligence of the manager. The Astley Deep Pit explosion, by which fifty-four lives were lost, he reports that the manager was utterly incompetent; yet this man held a certificate—Inspector Wynne must have known so—he permitted him to continue a manager of mines, notwithstanding. At Rawmarsh, South Yorkshire, twenty-three lives were lost; the jury recommended the inspector's views to be carried

out. Why should not the inspector of the district have had his views carried out before it was necessary for a jury to sit to inquire into the cause of the death of twenty-three of their fellow-men? Inspector Wales, in reporting on a disaster at Ogmere, by which five lives were lost, says there was an utter disregard as to the means of safety for the workmen. Was it not shameful in him to allow an utter disregard for the lives of the workmen to be continued at that, or any other mine? Of Bignall, it was reported there was not sufficient care in the use of naked lights. In

1875,

forty-three lives were lost at Bunker's Hill; Mr. Wynne reports that the ventilation was defective. At New Tredegar, twenty-three lives were lost. At Swarthe-Main, the jury found that the general and the special rules had not been carried out. As I have already said, it is the duty of the inspector to see that the special and general rules are carried out. If he is not doing so, then his inspection is a farce or illusory. In

1876,

we had, happily, no great mining disaster, at least, disasters of the kind that awe and appal the nation. One at Tillery, in Glamorganshire, Mr. Cadman, in reporting of it, states, that the mine roof was in a highly dangerous state. By that, I presume, he means that it gave off gas freely. We have no information as to whether he warned the owners of the mine of the dangerous nature of the work; if he had, and as he ought to have done, enjoined on them extreme caution, the poor men might yet have been living. In

1877,

we had the terrible Blantyre disasters, with a loss of 209 lives. According to Inspector Moore's own declaration, there had been eighteen accidents in the mine during the preceding twelve months. We are not informed that he or his assistants made any examination of the mine or colliery to see whether the Mines' Regulation Act of 1872 was being complied with or not. We know this much, that two brothers were severely burned a month or so before the great explosion, by an escape of fire-damp in No. 2 Pit. We know further, that although there were only two persons present when the explosion occurred, that this precious inspector never visited the survivor to learn from him a single particular connected with it. Of course, we have his own authority for saying, "that it is not his duty to ferret out violations of the Act." The Home Farm inundation he rests the responsibility equally upon the shoulders of the workmen as he does upon the employer. At Wigfach eighteen lives were lost; according to the statement made at the inquest, a portion of the mine was ventilated by a hand-fan, which drove in the air. A mode of ventilating a mine so utterly at variance with any principle that can be called ventilation, we cannot well conceive of. If the inspector of the district had attended more, or visited such mines regularly, instead of dancing attendance on other matters as he did, he must have seen this fan at work, and have ordered it to be removed, as an outrage on common-sense. When I repeat it, that these cases show that the inspection is to a large degree illusory, I know I am likely to be told that I am

#### VILLIFYING THE INSPECTORS.

I have not a word to say against the inspectors as men; for aught I know they are all honourable men; they may be perfection itself as citizens: what I complain of is, that the work they do as inspectors does not meet the requirements of the case. I know I may be told that it is impossible for them to make anything like a complete inspection of the various mines in their district: with that I have nothing to do. If an increase in the number of inspectors is necessary, let them demand it. I protest against their being allowed to say what is their

duty and what is not. Let me say, I am pleased to find that the present Home Secretary is doing his best for the purpose of letting them know that they are not the only parties that have a right to consider what work they shall do. I fear much that if they are not compelled to make weekly or monthly returns of all the collieries they visit to the Home Office, the good intentions of the Home Secretary will be frustrated; they will remain masters of the situation, and, being such, the inspection will remain illusory.

#### PENALTIES PROVIDED:

The frivolous nature of the penalties imposed by the Mines Act, I believe is another fertile source of the Act being more or less frequently broken, or its provision is set at naught with impunity. To me a penalty of £20 seems totally inadequate where life may have been destroyed. This becomes more apparent if an examination is made into the loss of life and the penalties inflicted by magistrates consequent thereon. A careful examination of the penalties inflicted will show anyone that on an average the "Great Unpaid," and I am sorry to say even Stipendiary Magistrates, seem to look upon five shillings per head as the maximum value of a miner's life. This is absolutely frivolous. What do we find in a large city like London? If two costermongers quarrel and fight without injuring each other, the penalty always seems to be something like ten shillings; if one knocks another down without provocation, the penalty is considerably more severe. In any alteration of the law, I should recommend that wherever life has been lost through the neglect of an employer, a manager, or any other person, that to that Act, as a penalty, there should be an actual imprisonment for a moderately long period.

#### BLASTING IN MINES.

I am not insensible to the provisions that were made under the Mines' Act of 1872 for the prevention of accidents through the use of blasting powder in fiery mines. I am perfectly satisfied that these provisions have been productive of a large amount of good, but the fact still remains that you prohibit the use of a naked light because it may come in contact with the gas which proves so destructive to life when ignited. You enclose the light that is allowed within a small circle; you fence it, if I may use the expression, against the possibility of the light coming in contact with the gas. When you blast, under any circumstances, or use powder for blasting where gas is, you are bound to create a flame a thousand times larger, ay, it may be ten thousand times larger, than the light of the naked lamp you have prohibited; the shot itself may liberate an immense quantity of gas that no human eye can see. To my mind the precautions now in operation look like a burlesque rather than a sincere desire to prevent accident through the use of powder. It is clear to me, and I believe must be to everyone who has given this subject the slightest consideration, that until the use of blasting powder be prohibited in every fiery mine, we will have those terrible disasters recurring again and again. I am aware that there are those who think differently with me, and who pretend to say that blasting may be carried on with a certain degree of safety to human life. We have to ask such to show us their plans whereby human life can be protected when blasting is carried on where fire-damp is. Some time ago, when putting a question on this subject, the right hon. gentleman the Secretary of State said that the workmen themselves would oppose further restrictions. Again, I have been told that representatives of the workmen are opposed to further restrictions; then if this be the case, it ought to be clearly understood by the country that the responsible minister for the Crown is prepared to continue a system that destroys several hundred lives every year at, or in deference to, the workmen's desire to get coal easily. It ought to be fairly understood by the country that there are representatives of

the workmen who, on some miserable political economic ground, or on some ground which exhibits a want, as I see it, of a sincere desire for the saving of life, would tolerate blasting to be continued. Let me not be understood as saying there should be blasting in all mines; there are mines where it is perfectly safe to carry on blasting. There are hundreds of mines in this country in which there is no fire-damp; to order the prohibition of powder there would be folly; but I repeat it, that until we have the total prohibition of the use of powder wherever fire-damp is known or suspected to exist and blasting is carried on, we will have a repetition of such events as the Swaithe Main, as Blantyre, as Bucknall, and a hundred others.

#### MANAGERS' CERTIFICATES—32ND CLAUSE.

By the provisions of the Mines Act, 1872, it is ordered that managers of mines must have a certificate of competency, to show that they are to discharge such a duty. If the holder of such a certificate does anything that may lead to the destruction of human life, or show, by gross negligence, that he is unfit to discharge the duties of a manager, then the Secretary of State may, on information of an inspector or otherwise, order an examination to be made into the conduct of such manager; and if it is proved that he is incompetent or unfit his certificate may be removed or suspended, and he therefrom deemed incompetent for a time or for ever for discharging the duties of a manager. A more salutary provision than this Parliament in its wisdom never enacted. We see its effects under the Merchant Seamen Act; but although Parliament made this provision, what is the history of it? The Mines' Regulation Act came into operation on the 1st January, 1873; up to the present moment only two prosecutions have taken place. These prosecutions were against parties who had committed only minor offences as compared with many others that have taken place since the Act came into operation. In the one case the certificate was handed back, in the other case it was removed; and let me here say that I have some doubts if these prosecutions or inquiries would have taken place had not questions been put by myself in this House as to whether the right hon. gentleman did not think they should be made the subject of an inquiry.

Mr. CROSS: I beg the honourable gentleman's pardon, the inquiries were directed by myself, and not arising from the questions he refers to.

Mr. MACDONALD continued: I will not argue with the right hon. gentleman as to whether my questions led him to order the inquiry or not, the Parliamentary history will show, and does show unmistakably, whether the instructions to hold an investigation preceded or were directed subsequent to the questions put. I have to ask, however, does it not look like a farce to say, that in these five years during which we have had so many terrible calamities—Blantyre, Swaithe Main, Bignall, Bucknall, Astley Deep Pit, and Welgach—does it not look like a farce to say that only two minor cases have been ordered to be investigated? I am aware that the Inspector-in-Chief is opposed to such prosecutions; he thinks that when a manager has been subjected to one penalty he ought not to run the risk of his certificate being removed. The House and the country ought to know to-night, and ought to know clearly from the right hon. gentleman, if there is a power higher than his that prevents this clause from being carried out—if, in short, the influence of the Chief-Inspector is such that other Inspectors will not report to the Home Office a necessity for investigations, because he thinks such investigations should not take place. I trust, therefore, the Home Secretary will give us some clear understanding on this point. If there is power rising above Parliament, which in its wisdom framed this clause, and also rising above the expressed opinion of the Home Secretary himself more than once, it ought not to be tolerated for a moment.



## 30TH AND 61ST CLAUSE MINES' REGULATION ACT.

These two clauses taken together I look upon as all-important, especially the latter (the 61st). Were its provision carried out, I am satisfied that the minor accidents which affect so much the death-roll that take place in mines would to a certainity largely disappear. The Clause provides that where an owner, an agent, or a manager, or a person in or about the mine, does that which is reasonably calculated to endanger the safety of the persons employed in or about the mine, or cause a serious personal injury or a dangerous accident, he or they shall be liable to an imprisonment, and not exceeding three months. Notwithstanding such an important provision being in the Mines Act, so far as is known to me during the five years the Act has been in operation not one single person has been convicted of such an offence by any magistrate in the United Kingdom. I feel bound to say, and I am satisfied, every person who gives the subject one moment's attention will agree with me in saying that it is idle for one moment to state or to imagine, that cases have not occurred which ought to have been dealt with under this Clause. In these five years nearly 6,000 lives have been lost, at least 30,000 persons have been seriously injured; out of all that I think the right hon. gentleman himself, the Home Secretary, will not dare to say that cases have not occurred to which this Clause should have been applied. I am glad to see it announced within the last few days that several magistrates have declared they will deal with offences under this Clause. The remarks that were made, I was sorry to see, however, were spoken as regards workmen. If this should be the case that the Act is applied simply to workmen, and not to employers, managers, and others, as well as workmen, the spirit of the Clause is outraged, and instead of its operation leading to a respect for law always being held in view it would lead to contempt for a provision that should be prized by all. The workmen that light a pipe, that strike a match, that incautiously remove a sprag, that neglect to put up a piece of timber for their own safety, that allow a corve to run away, that recklessly elevate men out of the shaft, that may be tumbled into the shaft, all do that which may lead "to a serious bodily injury," to a sad loss of life. To such acts the provisions of the Clause ought to be employed. But what of the owner, who under the provision that the gas of a mine should be diluted and rendered harmless, that the ropes, that the machinery, that the roadways, that the airways, which all should be made that no danger would arise from their condition to their workmen; I have to ask if he would not be the most serious offender, if he was not most likely from his neglect to cause the most dangerous of all accidents, then he ought to be sent to prison or the longest term without mercy or respect. I know I may be told that if he delegates his authority to another—to his manager—then all his responsibility ends. My reading of the Mines' Act does not lead me to this conclusion. I think that although he may hand over the management of his work to others, yet he is bound to see for himself that all the provisions of the Act are carried out, and if he fails in doing this he is equally responsible with those that he may have appointed to do the work for him; and should he neglect to do this, punishment ought to overtake him as well as the person who lights his pipe, strikes the match, and thus endangers human life. The provisions ought inflexibly to be applied to manager, agent, overlooker, underlooker, fireman, firetrier, engineer, banksmen, or to any other person having the slightest control over others. Were the Clause carried out in this spirit, I feel very certain that the accidents we hear so much of day by day would, if not totally disappear, at least be unheard of to a very large extent.

## GAS IN GOAVES, OR OLD WASTES.

There is another matter which calls for instant remedy, and that is the removal of gas from the goaves or old wastes of mines. During the passing of the Act, 1860, it was proposed that the goaves should be ventilated, that a healthy current

of pure air should be kept circulating through that portion of the mine or portions from which the coal had been removed. Had this passed into law, there can be but little doubt that many of the serious disasters which have occurred would not have taken place. I will not specify names, but I will mention statements made regarding some of the mines in which most serious catastrophes have occurred. Of one it was stated that there were twelve acres of gas built in, but were liable, at any moment, to have falls and crushes which would dislodge gas upon the workings. In another case, the gas in the goaves lay in such a quantity that from its effects the heat of the lamp was so great that it could not be touched by the human hand. It is notorious that in the Swaithmain, that in the Blantyre, and we could multiply the places now by the dozen, that large bodies of gas lay near where the men were employed, we have to ask, could anything be more outrageous than this? It is not sitting on a barrel of gunpowder which is safely packed up, it is sporting with a quantity of dynamite, which may in a moment be ignited, and produce all those dire effects which so often happen in our mining centres. Let us look at it for a moment, admitting the workmen proceed with their work with the utmost care and skill, they are surrounded by millions of cubic feet of gas which is ready to be exploded. He works in a place where falls of the roof may occur, where the pressure of the superincumbent strata may be so great that coal from the face of the working, that coal from the side of the working or other material may be sprung off in a moment, the miner having no control over it, his only light is the dim, flickering light of the gauze or the safety-lamp. The light is scarcely sufficient to make darkness visible, the coal or the stone, that we have before adverted to, is forced off by no fault of his—from the dim, wretched nature of the light, he is unable to see the effects that it may produce—the gauze is broken, the lamp is crushed, the light, small as it is, is well able to ignite tens of millions of cubic feet of gas, if it should be then—in a moment the fury of the fearful monster is awakened, if I may so describe it. The first victim is the poor unfortunate man or men that have been the innocent cause of the ignition. It tears through the working, it plays with life as a hurricane plays with straws; the busy hive is stilled that was only a moment ago all life—stilled in death. In a moment thereafter the shrieks and cries of the bereaved wives and their little ones are heard around the pit bank—the nation itself shows, it may be, signs of mourning for such a disaster; but we go on again and again to repeat the dreadful story. To have mines in such a state, to tolerate mines to be in such a state, is diabolical in the owners, and criminal in the nation. What we do need, and what we must have, is this: that the inspection shall be made real and not illusory. What we do want, and what we must have, is that the penalties should be increased, and not be frivolous as they are now. Blasting must be prohibited in every fiery mine—nay, in every mine where fire-damp is known or suspected to exist. The goaves, or "wastes," must be ventilated. The 60th and 61st Clause of the Mines' Regulation Act must be carried out. The clause relating to the certificates of managers must be strictly enforced wherever neglect is shown. These things done, and, I venture to affirm, the loss of life in our mines will be diminished by a half.

## THE 30TH GENERAL RULE.

I am aware that I may be told the miners have much in their own hands in connection with the safety of mines in their own protection, that they ought to carry out the 30th general rule of the Mines' Act. Experience proves that this cannot be done, or, at least, will not be done, in Yorkshire, in Northumberland, in Durham, in Fife and Clackmannan, and other places where the men are organised; where they have a confidence their organisation will maintain and preserve their liberty of action, it is done. Where the men are without any organisation of their own, and this state of things is encouraged by the bulk of the employers, then it is absolutely certain they will not act upon the 30th clause, and should in any particular case such be organised under the auspices

of the employer, the manager, or any other in connection with the mine or colliery the examinations made, as is well known, are nothing but a farce; they in effect, lull the men to destruction.

### RECKLESS MEN—WHO ARE THEY?

Some time ago, in putting a question respecting the ventilation of a particular mine, the right hon. gentleman the Secretary of State—kindly, I have no doubt, and in the most well-intentioned manner—suggested that I should advise the men to do more themselves to promote their own safety. The men, unfortunately, where these catastrophes for the most part occur do not look to us for a vice. The disasters happen, not among the men that are organised for their own protection, not among the men that desire to see improvements made in the law, or the law strictly carried into effect; they happen among the men that such organs as “Capital and Labour,” the “Mining Journal,” the “Colliery Guardian,” and the leading organs of capital are pleased to call the independent, they are those that resign themselves wholly into the hands of the employers, that who reward them for their glorious independence by having their mines in such a condition as that they are blown to pieces by the hundred, swept away by inundations by the dozens, the death-roll magnified, the pauper-roll increased, and the voice of charity heard calling throughout the land to relieve the victims caused by this glorious independence. Is proof for this assertion necessary? It is ample. Before the men were organised in Northumberland and Durham we had the Burradon disaster, &c., &c., which carried off their hundreds or destroyed them in a moment. In the great disaster of Scotland Nisbhill, Connouthead, Blantyre, and in the minor disasters, I challenge anyone to point to the loss of life of a single man organised for his own protection. In South Wales, take Cymmer, Risca, Ferndale, Lletty Shenkin, New Tredegar, Weigfach, and a hundred others, in which thousands of men have been killed and injured during the last forty years, and I challenge the production of the name of a single colliery where union men have been destroyed. Take Staffordshire, north and south, Bucknall, Bignall, Talk-o'-the-Hill, Apedale, and many others, and let anyone tell me how many of these men were organised for their own protection. Lancashire is next in the dread catalogue. In these 27 or 30 years the Inspectors Dickinson, Higson, Hall and others, have descended mines and gathered together with others, the bodies by the hundreds—making them thousands. Not one per cent. of all these have been men united for their own protection. The same story is to be told of Nottingham and Derbyshire, of South Yorkshire and of West Yorkshire. In the latter places, the proportion has, undoubtedly, been greater; but take the country as a whole and the catastrophes *in cumulo*, they will not show one per cent. of men who desired by their action to protect themselves. What applies to the larger disasters applies equally to the minor ones. The loss of life and injuries in the ones or twos is similar to those where the greater number are destroyed.

### CLOSE.

I have now done. I am sure in the course of these lengthened remarks I must have wearied the House. I would have been glad, indeed, if it had been possible to have reduced them. The position I have taken up for many years on the subject rendered it impossible for me to do so. I earnestly hope that the House will impress upon the Government by its vote in taking immediate and necessary action. You have legislated before, I think I am warranted in saying after what I have stated, that all will agree that matters cannot now stand where they are; all also, must be satisfied, that if anything is to be done of a permanent and beneficial character, that must be done by the Legislature. I have no wish to use any argument that would bear the semblance of clap-trap; but you stand

between the dead in your fearful mine at Haydock and the living, act, and these terrible disasters will be less frequent than they are. Let things rest, and you will again and again have the cry of woe raised, created in our mining villages; yet again and again you will have blighted homes by the hundred—will you have villages depopulated? hundreds of valuable lives destroyed. Will you have the public rates increased, wretchedness spread throughout the land, refuse to do anything. I implore of you, as men, as fathers, as brothers, and as citizens, as well as legislators, to aid us, to help us, to call upon the Government to be up and doing to spare the miners' lives.

Mr. MACDONALD, on sitting down, met with calls of move, move. He thereupon moved the following resolution:—

“Inasmuch as the history of mining disasters during the last twenty-seven years proves that many of them have resulted from the culpable neglect of well-known provisions in Acts passed for the safety of those employed in mines, it is expedient that the Government should at once take steps to see that the inspection ordered by the Mines' Act of 1872 be rigorously enforced:

“That, should the powers contained in the above-named Act be insufficient to meet the necessities of all the cases, the Government ought to introduce a measure without delay that will.”

Mr. BURT, in seconding the resolution, said that the subject was one of great importance, and that one of the saddest chapters in the history of British industry was that which told of disasters in connection with mines, presenting, in the midst of peace, almost the terrors and carnage of the battle-field. Certainly, the House had never been indifferent to the necessity of meeting the difficulty. Again and again Committees had inquired into the subject, and Acts of Parliament had been passed in order to mitigate the dangers of mining—Acts which had been attended with the best results, as the percentage of loss of life, whether compared with the quantity of mineral raised or with the number of men employed, had considerably diminished. One of the best Acts ever passed was that of 1872, and if that Act were strictly enforced, very little necessity would exist for new legislation. Never had the position of Home Secretary been filled by a man who was more anxious to enforce that Act than the present occupant of that office. He felt very much indebted to that right hon. gentleman for the instructions he had lately issued to the inspectors, and he believed that very great benefit would accrue from the stricter carrying out of the existing law. He did not desire to utter any wholesale condemnation of the action of the present inspectors. Whenever he had occasion to personally call their attention to the Acts not being carried out properly, or to dangers in particular mines, he had always received from them every courtesy and consideration; and, speaking of them generally, he believed they were anxious to discharge, conscientiously and energetically, the important duties which devolved on them. But there certainly had existed among the inspectors what he held to be a very vicious theory as to the mode of carrying out inspection. Many of them did not feel it at all incumbent on them to examine a mine unless they were specially sent for, or unless an accident had occurred. The instructions recently issued by the Home Secretary would, he hoped, remove that delusion, and convince the inspectors that it was their duty to examine a mine, whether they were sent for or not, and whether an accident had or had not happened. Again, when managers had been proved to be negligent, and when there was *prima facie* evidence that they were incapable, he thought it would be well that their certificates should be suspended or cancelled. Anyone at all acquainted with the circumstances of the Blantyre Colliery explosion would know that in that case there had been the grossest negligence and constant violations of the Mines' Regulation Act; and, if ever proceedings should have been taken to mark such misconduct, surely that would have been a proper instance for doing so. Examples should be made, whether by prosecution or by the suspension or cancelling of managers' certificates, where grave and manifest negligence had

been shown. The inspectors referred to the fact that the workmen did not avail themselves, as they might do, of the power given them by the Act to examine mines. For himself, he was sorry that the men did not adopt that course more frequently. But the examination of a large mine involved a great amount of time and labour; and it was, perhaps, hardly to be expected that a workman would undertake such a task. That provision of the Act had, therefore, not been carried out, except where the workmen were well organized, and they deplored some of their own body to make the inspection. In certain cases this had been done satisfactorily, and he had never heard of any unpleasantness having arisen between the men and their employers in consequence. He did not wish to palliate the shortcomings of the workpeople when Parliament had given them the power to look after their own safety, and he hoped that part of the Act could be more strictly carried out by the men than it had been hitherto. Turning to the consideration of what further should be done, they came to a more difficult matter than criticism of the present law. They should, however, he thought, be careful not to pass without inquiry any general and sweeping enactment without regard to the peculiarities and circumstances of particular districts. Influential organs of the Press had recommended that the safety-lamp should be adopted throughout all the mines of the country, and that blasting should be altogether abolished. Such a course would not only be unnecessary, but would be even mischievous in its effect. Let him illustrate that by reference to the calamity which had occurred in the Haydock Mine. At Haydock the safety-lamp was in general use, and blasting was strictly prohibited; and yet one of the most disastrous explosions ever recorded in the history of their mining industry happened there the other day. It was not necessary to abolish blasting altogether, for, in many mines, blasting was just as safe as it would be in that House. [Laughter.] Hon. gentlemen might laugh at his way of putting it; but what he meant was there was no risk of explosion from blasting except where there was fire-damp, and that was the point under consideration. Explosions were not the only or the chief element of danger which the miner had to encounter. Upwards of 28,000 lives had been lost in mines since 1851, and over 6,000 of them had been lost through explosions, while upwards of 11,000 had been lost through falls of stone and coal. As a practical miner, he did not hesitate to say that if they enforced the general adoption of the safety-lamp, with the miserably insufficient light it yielded, they would greatly increase the dangers arising from causes other than explosions. He thought that in certain parts of the country it might be desirable to abolish blasting altogether; and, as a general rule, blasting should be entirely prohibited wherever it was absolutely necessary that the safety-lamp should be used. It was absurd to hedge about a small flame of less than one inch, and to deal recklessly with a flame which might be hundreds of times as great. After everything had been done, however, which science could suggest and skill could execute, and after the mines had become careful and intelligent, still mining must remain one of the most dangerous occupations that a man could follow. That, however, afforded the strongest reason why they should do all they possibly could to guard the lives and lighten the burden of those who followed an occupation so laborious and hazardous as that of mining.

Amendment proposed—

To leave out from the word "That" to the end of the Question, in order to add the words "inasmuch as the history of mining disasters during the last twenty-seven years proves that many of them have resulted from the culpable neglect of well-known provisions in Acts passed for the safety of those employed in Mines, it is expedient that the Government should at once take steps to see that the inspection ordered by the Mines' Act of 1872 be rigorously enforced: That, should the powers contained in the above-named Act be insufficient to meet the necessities of all the cases, the Government ought to introduce a measure without delay that will."—(Mr. Macdonald.)

—instead thereof.

Question proposed, "That the words proposed to be left out stand part of the Question."

SIR GEORGE ELLIOT said, he had listened with great interest to the able speeches which had been made by the hon. Members for Stafford and Morpeth. Setting aside for a moment, what some might have thought an exaggeration on the part of the hon. Member for Stafford as to the causes of negligence, he might say that he remembered many of the accidents to which he referred—for instance, Ince Hall Colliery, near Wigan, and the Oaks Colliery, and the Lundhill catastrophes. In the first case, it was not quite true that the management was censured by the jury. However, he did not intend in any way to oppose the inquiry or to differ from the versions given by the hon. Member for Stafford. From time to time the power given to the Inspectors had led to a great reduction of mischief, and he thought there was no exaggeration in the statement of his hon. friend, when he said that if the Mines Regulation Acts had not been in operation the death-rate would have been very much greater than it is now. He was very very much struck with the statements which had been read out by the hon. Member for Stafford, and it was a very peculiar point, speaking from experience some 40 or 50 years ago, that the accidents mostly took place in Northumberland and Durham. Afterwards, they took another direction—namely, into South Wales. They then occurred in Yorkshire, and finally found their way to Scotland. His own theory was, perhaps a curious one; but he maintained his own opinion on this point was correct. It might be interesting to shortly explain it, though not quite pertinent to the argument. But they would find the workings from the surface down to a pit of the depth of 400 or 500 feet were, comparatively speaking, not dangerous at all. From 500 down to 1000, 1100 or 1200 feet, he called the zone of greatest danger; and when that depth was passed, there was again less danger in working the coal. He had found that to be the case in many of the pits in Wales; and he ventured to say, if a record of accidents were taken which had occurred below 500 feet down, and those at a depth of 1100 feet or 1200 feet, it would be found that two-thirds of the accidents had happened within the zone, and neither above nor below it. The object he had in mentioning this was, that it might be necessary in revising or considering any further regulations to put in certain stipulations, so that this point might be considered with a view of placing a limit on a more special supervision on what he called the zone of danger. The hon. Member for Morpeth, in a speech to which he had listened with great pleasure and who had spoken, as usual, with such good sense and good taste, referred to the subject of inspection; but he could not entirely agree with him. He had, however, come to the conclusion that the object of insisting upon this minute inspection was simply an impossibility when looked at from a practical point of view. They required an Inspector to examine coal mines so minutely as to be able to know, direct, and control the general management and ventilation of collieries. That was not possible, as it would not be in the power of anyone to do so. He remembered when he was managing one of his own collieries some years ago—the Usworth—an Inspector came and examined the colliery, and in the course of the examination he made a suggestion, rather a peremptory one, that such and such alteration ought to be made in the ventilation. It happened that everything he suggested to him were the very things he had himself tried previously, and, as they had failed, he had been obliged to have recourse to the means then in operation, and which were far superior to the method suggested. This, then, showed that it was impossible for an Inspector, who only visited a mine occasionally, to understand what were the best precautions to be taken as well as the manager of a colliery, who was constantly in attendance. He believed that if too stringent measures were enforced it would only hamper the inspection of mines to a very great extent, and he therefore considered that the making of inquiries by Inspectors from time to time, as to where they were, what they were doing, and requiring proper returns and statements to be made and prepared, would have a much better result. He now came to the next point, which was one which he had been for years acquainted with. He meant the proposition whether coal should be worked by means of gunpowder

or by other means. The use of gunpowder simply meant the application of a naked light, which was of itself a great source of danger. He knew that what he was saying would be much criticised, and he was aware, also, that if what he was about to suggest were adopted would affect anyone prejudicially, it could not be more prejudicial to anyone more than to himself. These, however, were the convictions he had arrived at, after considering all the circumstances of the case—that the best remedy he could suggest was that naked lights or fires should not be used where inflammable gas existed. If this were not done, accident would occur from time to time, and one great protection for the miner would be lost. Then another factor in these accidents was this—that mines were now much deeper than they were formerly. Thirty or forty men were then in a pit; there were now hundreds employed. Where such large numbers were employed, it was impossible to provide against individual carelessness. He had an accident in the colliery within the last two months, where a man endangered the lives of his fellow-men by the most simple inattention to an obvious duty—namely, putting an india-rubber band beneath the glass cylinder of the clay lamp. As the hon. Member for Morpeth (Mr. Burt) very properly remarked, after everything was done for safety, mining was still a very dangerous employment. It had been stated in that House, that the Mines Regulation Acts had enhanced the cost of the getting of coal by 1s. or 1s. 3d. per ton. Some of the managers had informed him that the Mines Regulation Acts had cost a considerable sum; but he told them that when they alleged that all the increased cost was due to the Acts, he denied the accuracy of their opinion, and told them that they must look elsewhere for the increased cost. What he should like the Government to do was to have a Royal Commission appointed to ascertain how much the Act had increased the cost of production, and how much. The abolition of blasting in fiery mines would probably increase the cost to the consumer; but he agreed with the hon. Member for Morpeth, that in coal mines where there was a great amount of gas, there was no other remedy than the prohibition of the use of gunpowder. There were other remedies which might be used advantageously; but the remedy he would pledge his honour and his professional opinion and experience to that House, as best conducive to the safety of the miner, was the abolition of gunpowder in fiery mines.

MR. LYON PLAYFAIR: The hon. Member for Stafford (Mr. Macdonald) has done good service to the cause of humanity in drawing attention to accidents in mines, some of which have recently been of appalling severity. No doubt he is right when he contends that all accidents of this kind are preventable, and, therefore, that they ought to be prevented. Any breach by man of a law of nature is punished with inexorable severity. If a man loses his balance on the top of a precipice, the earth has no bowels of compassion, and by its gravity will assuredly drag him down and mangle him at the bottom. So it is in mines. There are certain scientific conditions for safety, and when these are kept there is perfect security; but if one of them is broken, the destruction of the miner is swift and sure. The laws under which fiery gas explodes are perfectly known. The dilution with air, which renders it harmless, has been as accurately measured as science and practice can require. Science has given to us, in the safety-lamp, a means by which you can pass through explosive mixtures with perfect safety. I have spent hours in a mine, after an accident, in passages filled with explosive gas, with a sense that great care would afford me security. But no sane person ought to trust to this means of safety, except under constant vigilance for a quick and sudden current of air, or an accidental rupture of the gauze, renders the lamp useless. When the fiery gases begin to flicker inside the safety-lamp, that ought to be taken as an immediate warning that the main condition of safety—efficient ventilation—is in a bad state, and it should at once be rectified. Neglect of this precaution is said to have been the cause of the great Blantyre explosion. Yet, with all our knowledge and means of safety appalling accidents still occur. As they are preventable, and ought

to be prevented, on whom should we fix the responsibility? There are two classes primarily responsible. The employers are responsible for all the means of safety under their control, for the winding gear, for the upholding of the passages and other means of communication, for efficient ventilation of the mine, and for the good state of the safety-lamp. The miners, on the other hand, are responsible that they use all these appliances with intelligence and caution. If the miner sits on the edge so carelessly, in the ascent or descent, that he tumbles over, he, and not the employer, is in fault. If the miner leaves open a ventilating door which he should have shut, or if he uncovers his lamp, or pokes a hole in it in order to light his pipe, and an explosion follows, the employer can have no share in this responsibility. Surely, then, it is clear that the relative responsibilities of employer and employed should be sharply defined, and that each should be punished for an infraction of means of security devised for the safety of all those occupied in a mine? Clearly the two chief factors in carrying out measures of safety are the employers and employed, and nothing whatever should be done to lessen their several, or, it may be, mutual, responsibilities in the eye of the law. But the terms of the Motion of the hon. Member for Stafford introduces another factor, upon which he would place a chief reliance. He attributes the accidents in mines chiefly to the negligence with which Government inspection is enforced. To my mind, the exaltation of this factor is very likely to lessen the value of the two more important factors—the immediate responsibilities of the employers and employed. Certain powers have been given to the Executive Government to see that well-known measures of safety and good discipline shall be carried out in each mine. A neglect of these forms a proper subject of inspection and prosecution. But no Government inspection can be nearly so effective as the constant immediate responsibilities of employers and employed. The rupture of one wire in the gauze cage of a safety-lamp is sufficient to cause an explosion. What system of inspection can provide against that? The slamming of a door, which may divert the current of air from the fiery facing of coal, when it is oozing out gas at every pore, may produce an explosion. How can Government inspection provide against that? The more that you increase Government inspection, the more you lessen individual responsibility. It is the latter which we should do everything to augment. But personal responsibility is of little value, unless it is guided by intelligence. One single man, by his ignorance, may imperil the safety of a whole mine. Do we do anything to augment that intelligence? The State has made education compulsory, but it does not adapt that education to a working-man's requirements. Some higher and specific subjects are attached to schools, in order to induce a brighter intelligence; but they are cast in such a rigid mould, that no teacher can adapt them to the requirements of his pupils. Passes in grammar or geography will never tell a miner what is the nature of air and its movements, so as to produce ventilation, or inform him of the character of fiery gas which is the evil spirit that infests his workings. And so I have seen, when I acted as a Commissioner on Mining Accidents, underground men, responsible for the whole ventilation and safety of a mine, who could not tell me what air was, and who were absolutely ignorant of the nature of the fire-damp which scorched miners, or of choke-damp which suffocated them. I see that the deputation of miners who waited on the Home Secretary the other day admitted this gross ignorance, and asked him to secure knowledge on the part of such men. But how is knowledge to be had when it is not taught? A free grant for such useful knowledge in many districts, instead of grammar, would soon extend it so that knowledge might become power for the prevention of accidents. It is by doing everything to promote the exercise of intelligent watchfulness and care on the part of the employers and employed, that we must look for the lessening of accidents in mines. Government ought to enforce the general rules of safety, as provided by the Act, but should not accept a detailed responsibility which it cannot possibly discharge. But it may do much to promote an intelligent acquaintance with the well-known laws which are necessary for

public safety; and when it has given an opportunity in primary and secondary schools for these laws to be learned, then it would be a duty of the State to enforce a knowledge of them on every officer who is charged with the measures of safety.

MR. KNOWLES admitted that the question which had been raised did not concern that House, or the mineowners and those employed in mines alone, but the whole country. There was more coal raised in this country than in all the other parts of the world put together, and in their coal supply lay, to a great extent, the secret of their greatness; and, comparatively, he did not think the number of casualties occurring in the course of mining operations was greater, or as great, here as in other countries where the same industry formed part of the national life. Nothing could be accomplished in the way of preventing accidents except by the co-operation of employers and employed. He was not one who had ever thrown cold water upon inspection, and he quite agreed that if they had more Inspectors it would be better. He believed that inspection in the past had done an enormous amount of good. It could not be denied that they were making progress. He recollected when he was working in the mine himself that women were employed in the mines. The question of ventilation had always been a difficulty. In 1850 he had taken part in an effort which was then made to have an adequate amount of ventilation, and some people who took a great interest in that matter thought it was impossible to have it at all times. He contended they had inspectors in every mine. In a large mine he had no doubt there were 12 inspectors. The fireman and others were all inspectors; but if the Government thought fit to increase the number, he should be glad to see it done. The suggestion as to the extent to which the safety-lamps should be used was an important one. In consequence of the small light it gave there was not a good chance of examining the roof and fracture in the coal, and hence accidents arose. At the same time, he would say that no man ought to have the right to work where it was not safe to have a naked light and to blast. They met with great difficulties, however, in consequence of the great depth, and all mines made gas at one time or another. They had an accident near Bolton some time ago in a mine which was considered to be perfectly safe, and which, he believed, was perfectly safe up to the time of the explosion. The men worked with naked lights, and they blasted coal, but every one of them was killed. That accident was, he had no doubt, due to a sudden outburst of gas. Unfortunately, if an explosion should occur in a well-ventilated mine, the consequences would be much more serious than in an ill-ventilated mine. If examination were made, he thought it would be found that since the last act was passed, and since they had had heavy ventilation, the explosion had been of a much worse character than formerly. Bitter as the pill might be to swallow, they would have to consider the question of doing away with blasting altogether, and also with the use of naked lights. Their first consideration should be to protect the lives of their workpeople, no matter at what cost, and in saying this he believed he was speaking what was the sentiment of the whole of the coal owners. The hon. Member for Stafford (Mr. McDonald) said that the managers ought to be brought into Court whenever an accident occurred; but he deprecated such a proposal, as it would involve a censure on individuals in cases where they might be wholly free from blame. The result of such a course would be that very soon there would not be one reliable manager of a mine left. They should remember that managers and coal owners were not infallible. The occupation in which they were engaged was a very dangerous one, and he believed that in circumstances of great difficulty they did their best. The men engaged in mines would, he was convinced, compare favourably with a like number of men of any other occupation. Where there was good and strict discipline there was little or no recklessness. For the last five years he had not had occasion to call any collier in his employment to account for striking a match, lighting a pipe, or doing any other act which might occasion an explosion. Hard things had been said of mine managers, but they

should remember that these men were formerly workers in the mines, and were selected for their position on account of their special fitness, skill, and good conduct. Then, again, an owner invested in a mine £50,000 or £100,000, and it was simply preposterous to think that either manager or owner would be so negligent as the one to bring ruin upon himself or the other to leave himself open to a criminal prosecution. If the Home Secretary and the House thought it desirable to have the subject investigated by a Committee, both owners and managers would afford them every facility to make the inquiry complete and satisfactory. He believed they would also heartily co-operate in the carrying out of any scheme by which life and property would be rendered more secure than they now were.

MR. J. COWEN said, he thought the Members of the House who interested themselves in the promotion of the Mines' Regulation Act of 1872 had every reason to congratulate themselves on the success of that measure. It had not accomplished everything that some of its warmest promoters expected from it, but it had achieved a great deal; and worked, as it would be in the future, under the rules that the Home Secretary had just drawn up for the guidance of Inspectors, it would, no doubt, produce better results in the time to come. He thought the House, and the country too, ought to be congratulated on the improved tone of the discussion which took place on this subject. Everyone familiar with mining legislation could not fail to be struck with the different spirit that now pervaded the speeches on both sides of the House, with that which pervaded them when those measures were first introduced. The fears then entertained as to the consequences likely to be produced had proved to be fallacious, and the good results were acknowledged by all. Casualties in mines occurred from three causes. First, there were accidents that were unpreventable. No skill, or science, or art could stop them. Under certain conditions that were unknown and inevitable, and catastrophes took place. Others occurred through the ignorance or indifference of the owners and managers. Others, again, through the recklessness and carelessness of the workmen. But he believed that these two latter kinds of accidents were greatly exaggerated. They were not nearly so numerous as was generally supposed. It should always be recollected that a miner went to work with his life in his hand. A coal owner by his carelessness risked his property. He could not insure himself against accidents. A man might buy a ship, insure it, send it to sea, and sink it, and perhaps be a gainer in consequence. But they could not insure a mine, and everyone who lived in mining districts knew numerous incidents where men had been ruined through accidents in their collieries. They might make up their minds, therefore, that under any circumstances, even the most favourable, they would always have accidents in these undertakings. The public were only excited on this subject when they received intelligence of some terrible explosion. It should be recollected, however, as his hon. friend the member for Morpeth (Mr. Burt) had said, that the number of people killed by explosions was, comparatively, much smaller than those killed by the ordinary working of mines, such as the falling in of the roof, and other unavoidable causes. The number of persons thus deprived of life was considerable; but the circumstances usually excited little commiseration, as they came two or three at a time, and not in scores or hundreds. But even that was not the worst of it. There were hundreds and thousands of men who met with accidents, who, though not killed outright, were maimed for life, and whose calamities were never heard of. The Home Secretary received a list of the persons who were absolutely killed, but he received no return as to the number of men who had their backs injured, their ribs squeezed in, or their legs broken—men who were carried home alive, who might live for a few weeks, a few months, a few years, but who were useless to themselves and a burden to their relatives. It was some provision for these men that ought to be made. They had a society in the north of England—the Miners' Provident—and he believed the records showed that one out of every six members in a year received more or less injury in the pits. It



had been calculated, upon very good authority, that something like 20,000 miners in a twelvemonth were injured in the pursuit of their employment. What he would suggest to the Home Secretary was, that a provision should be made for the families of these men, and for the men themselves, when they could not continue their work. By the imposition of a tax of, say a farthing a ton, or half-a-farthing a ton on all coal raised, and by the men themselves agreeing to contribute a certain percentage of their wages, a fund might be accumulated that would provide for all contingencies, and prevent the constant appeals to the public for help that were now made for the miners after a calamity. The fund in Northumberland had been successful. What he desired was to simply take that principle, and apply it to the whole nation. They had a precedent for it. Many years ago the keelmen on the river Tyne—men who were employed in carrying the coals from the straithe to the ships—had a fund of this kind established. The late Lord Brougham (then Mr. Brougham) and the late Lord Abinger (then Mr. Scarlett), and others, interested themselves in passing a Bill through Parliament that imposed a farthing a chaldron on all coals that were shipped in the Tyne, and 8d. a tide on the men. This fund, for years, was the support of disabled watermen, and was highly successful. By the altered circumstances of commerce the trade had decayed, and the fund was abolished. But the principle that underlay it might be fairly applied to mining operations generally. The mine-owners would not suffer by it, because the farthing a ton would ultimately come out of the consumers' pocket. The public would not be injured, because the poor rate would be lessened in consequence; and the men, by contributing to it, would feel that they were doing something towards their own comfort and independence in infirmity and old age. He would make still another suggestion. It was observed that accidents in coal mines seldom came singly. When there had been one, two or three always succeeded it. There was every reason to believe that these casualties were occasioned by some sudden and great change in the atmosphere. Whenever a cyclone or circle of storms visited this country, they frequently produced a series of mining accidents. What he would suggest to the Home Secretary was, that he should telegraph to the different mines in the country in the same way as he telegraphed to the different seaports an indication of a coming storm or change in the weather. The publication of this meteorological information had been of great service to seamen, and he felt satisfied that if like care were taken in giving similar warnings to mine owners and managers, that some, at least, of the explosions might be avoided. What might be only a piece of inoffensive carelessness one day when the weather was fine, might the next day, on account of the difference in the atmosphere, be the cause of a serious catastrophe. If the miners were called upon to give additional care when the weather was threatening, then some of the accidents might be prevented, or their severity lessened. One observation further he wished to make, and that was with respect to the use of blasting powder. He quite agreed with the hon. member for North Durham (Sir George Elliot), that the use of blasting powder ought to be prevented in fiery mines. He also agreed with his hon. friend the member for Morpeth, that wherever safety-lamps had to be used blasting ought to be prohibited. But it would be folly to discontinue blasting in all mines, especially in cases where they could use candle openly, and where there was no gas. They might blast whole coal without danger. It was when they began to blast the pillars in the "broken," that there was the greatest risk. They talked about the additional cost that the Mines' Regulation Act had thrown upon the production of coal; but if Parliament made up its mind to prohibit absolutely, and under all circumstances, the use of blasting powder, they would find that they would entail upon the consumer a vast deal greater charge than ever the Mines' Regulation Act had heretofore imposed. He also desired them to remember that by preventing the use of powder, they would greatly increase the labour of the miner and the hardships of his occupation. The use of powder might be reckless, but regulation was one thing and prevention another.

LORD ELCHO said the country ought to be proud of men such as the hon. member for Stafford (Mr. Macdonald) and the hon. member for Morpeth (Mr. Burt), and his two hon. friends behind him, who, having begun life as practical miners, had raised themselves to the position which they now occupied. Those who had any share in the passing of the Mines' Regulation Act of 1872 must be gratified at the testimony which had been borne by those hon. gentlemen to its value as a piece of legislation, and that all that was necessary was that it should be put into operation. He had always held that the principle of a periodical inspection of mines was perfectly sound, and he was glad to hear that a reduction of loss of life had followed; but there were so many mines, that it was impossible to look either for a thorough or for a daily inspection, but only for such as would give practical effect to the Act. He had seen the special instructions issued by the Home Secretary, and he felt that all that could be done without fresh legislation should be tried first; and, of course, if that proved insufficient, the right hon. gentleman could take further steps for the attainment of his object, with the full knowledge that the House would support him in all that he might think necessary for the benefit of the mining population.

MR. PLIMSOLL ventured to make a call upon men of science to do what they could for the prevention of accidents in mines. Parliament had done its duty by passing Acts to ensure all due precautions being taken, and if scientific men could suggest some means by which accumulations of fire-damp might be traced, or made visible, it would be a great boon. It appeared to him quite possible that some chemical means could be found to make the presence of the gas visible, and he saw no reason why the scientific difficulty need be considered insuperable.

MR. ASSHETON CROSS said that he was extremely glad that this subject had been debated, and nothing rejoiced him more than the tone in which the discussion had been conducted; for it showed, at all events, a common feeling among employers and employed, and all connected with mines, that everything should be done that could be done, either by legislation or otherwise, for the purpose of reducing, as far as possible, the danger to the workmen in mines. So far as that went, he was grateful to the hon. members who had spoken for strengthening the hands of the Secretary of State in carrying out the work in which he had been for some time engaged; and he could not treat the debate as an attack, either upon the Government or himself. The hon. Member for Morpeth (Mr. Burt) had been good enough the other day to introduce to him a deputation, from whom he had learned that the Mines' Act was being worked in a satisfactory manner. Therefore, he did not think that the motion on the Paper was in the least a reflection on the Government. With respect to the practical question of what could be done, the hon. Member for Stafford (Mr. Macdonald) went a good deal into the early history of the loss of life in mining operations; and also, with respect to later times, he had shown that, although accidents were much less frequent than formerly, there were still sufficient to direct attention to the subject, and to prove the need of further action to reduce the loss of life in these operations. It was not his (Mr. Assheton Cross's) desire to lay undue stress on what had already been done, nor could he contend that enough had been achieved. But it was right that it should be known that the Mining Acts that had been passed had been very successful, and had materially reduced the loss of life. If they looked at the reports of the mining inspectors for the present year, they would find that, taking the decade from 1851 to 1860, the loss of life from explosions had reached 82 in the year. That was the number of accidents, not of deaths. In the next ten years—1860 to 1870—the average was 56. Further, if they took from the time of the Mines Regulation Act—namely, the beginning of 1873 to the end of 1877—they would find that the average had been reduced to 44. The result, therefore, was that in the first ten years he had taken, the accidents causing one or more deaths were 82, and since the passing of the Act they had been

only 44. That showed, at all events, a considerable reduction. Again, if the number of deaths caused by accidents, and not the number of accidents, were taken for the same period—from 1851 to 1860—the average each year would be found to be 244. In the next decade, was reduced to 226; and, since the passing of the Mines Regulation Act, the average had been further reduced to 99. Thus, since the passing of the Act, the number of deaths had been reduced from 244 to 99. That was a great step in the right direction, and it became a much greater step if they took into consideration the increased number of people employed in mining operations. They must also consider what fell from the hon. Member for North Durham (Sir George Elliot), and which, to his mind, had a very great deal to do with these accidents—namely, that they had got down to the dangerous zone. They were not now working the same class of mines as in the first decade; but a much more dangerous class was being worked in many parts of the country, and also, probably, worked without those persons who were engaged in the mining operations knowing of the danger which they were incurring. Taking that into consideration, they would find that, in the first period he had taken, the ratio of persons employed to each death was 1,008, and in the second decade it was 1,400. That was a considerable difference. He did not wish to press too much on figures; all he desired to show was, that from 1851 to the present time there had been a great reduction in the number of deaths, and in the number of accidents causing deaths—a very large reduction when the increased number of persons employed in mines was considered. He only hoped that when the Act had been enforced for a few more years, they might be able to reduce that number considerably below its present rate. The deputation, introduced to him by the hon. Member for Morpeth, spoke of several points on which they thought the Mines Regulation Act ought to be strictly enforced, and he entirely agreed with them. When he first came into office that Act was handed over to him by his predecessor, and required very carefully looking into; and the longer he had been in office the more he had been impressed with that fact. He did not think he should be charged with not having put the Act into force to a greater extent than it had formerly been. There had not been, to his knowledge, any serious accident in regard to which he had not sent down a special person to inquire at the inquest into the cause of death. He only mentioned the point for this reason, that it was curious to see in how few cases he had been able to institute a prosecution. He had always sent down the most independent man he could find to the inquest; and, except when he first came into office, and when he admitted that he was not quite so much alive to the working of the Act as he had since become—in every single case since, he had given absolute instructions that wherever a prosecution could be instituted, criminally or otherwise, it should be done. In the result, he was bound to say that they were very seldom able to prosecute; but, whenever they could show actual criminal negligence, a prosecution had been instituted. The hon. Member for Morpeth and the hon. Member for Stafford, in common with the deputation, were of opinion that very great care ought to be taken with regard to the certificates of managers. He entirely agreed with that; he looked upon the certificates of managers of mines precisely in the same light as the certificates of the masters of ships licensed by the Board of Trade. He thought that wherever there was any negligence by which the master of a ship could have had his certificate taken away, the same rule ought to be followed in the case of a negligent manager of a mine. The result had been that in the instructions which had been issued to the Inspectors—and he could not act without a report—had every one of them a special notice, that if they saw there was such negligence as in their opinion would warrant a prosecution in the case of a certificated manager of a mine, they must give information to the Home Office in order that an immediate prosecution might take place. The hon. Member for Morpeth (Mr. Burt) had said that there was a difficulty about Inspectors, because an Inspector might go to a mine one day and find it perfectly safe, yet a sudden

explosion might occur in it—perhaps the next day, or the week after it had been inspected—and something very serious might occur. Therefore, the hon. Member for Morpeth, and the deputation, expressed some doubt whether inspection as now carried out would protect the owner of a mine. His answer was that he did not think inspection would protect the owner of a mine, except in this respect, that if the mines were constantly inspected, the Report of the Inspector would be *prima facie* evidence before a jury that the owner and manager had taken proper precautions. But if it were proved, also, that the owner or manager of the mine had been guilty of carelessness, he would be equally liable, whether or not the Inspector had gone over the mine. When they came to the case of inspection, he agreed with what had been said in the course of the debate, that they must rely mainly for the operation of the Act upon the responsibility of employers and employed; they must rely, so far as the Home Office was concerned, upon inspection, but not too much, because the Inspector might go into a mine one day and report it safe, and the week after it might be in a totally different condition. What he meant to say was, that no number of Inspectors they could possibly have could inspect all the mines and all the workings in mines. It was within the knowledge of everyone that was at all acquainted with mines, that it could not on any day be told from what quarter danger would come, or whether a mine would continue safe one single day. But the duty of the Inspectors must be to see that the special rules were right, that the general rules were carried out, and that the general discipline of the mine was right and proper. He quite agreed that there had been differences of opinion among Inspectors as to what their actual duties really were. Some of them he knew had expressed the opinion that they were not to visit a mine unless there had been some accident there, or unless they had been sent for either by the workmen or someone else. That view he entirely repudiated, and, in the result, he had thought it better to issue consolidated regulations from the Home Office to the Inspectors, which would state as clearly as could be the views of the Home Office as to their duties. Those regulations stated that, first of all, it was the duty of an Inspector to visit and inspect a mine on invitation; next on complaint; and, inasmuch as miners were apt to shrink from volunteering information for fear of giving offence to their employers, the Inspectors should pay attention even to anonymous complaints, provided that they were not on their face incredible or unreasonable. Further, wherever the information proceeded from a private or anonymous source, he should be careful so to conduct the inquiry that it should not point to his informant, or lead to his becoming known, when he had received neither invitation nor complaint; but from information—such as from time to time could not fail to come to him in the course of the regular discharge of his duties—he had reason to believe that the mine was not satisfactorily conducted, or was not in accordance with the Statute. In the above cases the Inspector would not send notice of his intended visit, if, in his judgment, it was likely to frustrate the object of the inquiry. In addition to these inspections, which were imperative, and other inspections which the Inspector might take the opportunity of making when he had to visit a mine for the purpose of transacting other business—as inquiry into an accident, or arranging for the establishment of special rules—it would be the duty of the Inspector to devote whatever time he could spare to the inspection of those mines where he thought it most likely to be of service, such inspection to be above ground and below ground, and without notice. The liability to an official inspection at any time, without warning, might be a most effective guarantee against abuse; and an unexpected visit from an Inspector was none the less beneficial because he found nothing of which to complain. The Inspector, therefore, should make a point of arranging his business, and that of the Assistant Inspector, with a special view to secure as large an amount of time as possible for these casual inspections. It was in the confidence that Inspectors realised and conscientiously discharged this obligation, that the Secretary of State had abstained from requiring each Inspector to send in a

periodical Report of the business done on each day. But this dispensation made it the more necessary that an Inspector, in drawing up his annual Report, should, for the satisfaction of Parliament and the country, state enough to show that this most important part of his duties had been habitually and effectively carried out. For that purpose, the Inspector would keep a record of his visits to all the mines which he inspected, and of the result of each inspection. Those were the Rules which had been issued for the information of Inspectors, and he did not think that inspections could be carried further than was laid down by them. Then, so far as the competency of the managers was concerned, whatever circumstance came to the knowledge of the Inspector which should lead him to the opinion that an inquiry ought to be made under Section 32 of the Mines' Regulation Act, it would be his duty to make application to the Secretary of State. The hon. Member for Morpeth and the hon. Member for Stafford had alluded to the use of safety-lamps and to operations by blasting. He quite agreed that it would be wise—wherever it was necessary to do so—to use the best safety-lamps that could possibly be employed. But it should not be forgotten that there was danger from the falling of the roof, and there could be no doubt that the number of accidents from that source was greater than those from explosions. They must not, therefore, come to the conclusion that because it was insisted that everybody carried a safety-lamp, all the danger would be got rid of: for, in some cases, instead of preventing danger, the tendency was to increase it. The question of introducing the safety-lamp must be treated with discretion. With regard to blasting, that was a very different question, and he was aware that there had been a great difference of opinion amongst Inspectors on that point. Some of the Inspectors held very strong conviction that blasting ought to be given up in what were called fiery mines. No one would say, however, that blasting ought to be given up in every mine. In some mines it would be a great deal safer to blast than in that House, and would not produce such dangerous consequences. In several cases which had come under his notice, he had pressed on the owners of collieries—for he had no power to interfere further—that they should give up blasting by gunpowder in fiery mines. But he had known in many instances that the objection to the discontinuance of blasting came not so much from the masters and colliery owners as from the men themselves; because, where blasting was employed, a much greater quantity of coal could be obtained in a shorter time. What he said to the deputation the other day, and which he thought ought to be fairly considered, was, that in all cases where the mine owner was unwilling that blasting should be employed, the men ought to make no objection. If objection on the part of the men should cease, he did not believe there would be much on the part of the owners to the discontinuance of blasting. With respect to what had fallen from the hon. Member for North Durham (Sir George Elliot), he did not think that the cost of getting the coal without blasting would be very much increased. So long as blasting was carried on in the fiery mines, it was obvious that the danger must be greatly increased. Why was it that in those dangerous mines the men were compelled to have safety-lamps? Because it was not thought right that a candle or naked light should be used. But if a wretched farthing candle could not be trusted, why could a great stream of light from blasting be allowed? It was inconsistent to prohibit the farthing candle and permit the blast. He did not think that at the present moment it would be necessary to appoint a Royal Commission, because the Government had called the attention of mine owners throughout the country to the subject, and before another Session he hoped to have their opinion upon it. Attention had been very much drawn to the question for more than twelve months, and opinion was gradually ripening upon it. Having spoken something with regard to the duties of Inspectors, and of colliery owners, and of certificated managers, he would now say one word about the men themselves. Whatever inspection there might be, whatever regulations might be laid down, however careful owners and managers might be, they must not rely upon Inspectors, or managers, or employers, but upon the employed. All were engaged in one

common business and one common trade; there was a common danger, and no Inspectors, and no care on the part of the colliery owners or managers, would be of any avail unless there was reciprocal attention on the part of the men. They must not endanger others by breaking rules to gratify themselves, nor must they put their fellow-workmen in jeopardy by their carelessness; for, if they did not take precautions, no power, no care, on the part of anyone else, could prevent accidents. With respect to the working of the Explosives Act, which was passed some four or five years ago, he might say that it had worked incalculable good. It had prevented many accidents, but only because the most stringent possible regulations were laid down by it for the workmen themselves. He only mentioned this for the purpose of showing that mining, being a dangerous operation, every precaution must be taken on the part, not only of mine-owners and managers, but of all employed in the working. He agreed with what had been said by the hon. baronet the member for North Durham, that the mining operations in many parts of the country were now penetrating a dangerous section. This was particularly the case in the Scottish coal fields, on which the Blantyre explosion occurred not long since. That district was one of those where those engaged in mining operations ought to be especially careful; and it was important that colliery owners and workers should be informed of the danger they were incurring, and he hoped that they would take the necessary precautions for avoiding the recurrence of such a terrible accident as the Blantyre explosion. He entirely agreed with what had been said by the right hon. member for the University of Edinburgh (Mr. Lyon Playfair), that not only should reliance be placed upon employers and employed, but that a very great gain would be achieved by instructing those persons of an ordinary rank of life, who were forced into positions of great responsibility, in the nature of the particular dangers which not only themselves but all employed under them incurred. So far as he was concerned, that suggestion should be acted upon. With the suggestion made by the hon. member for Derby (Mr. Plimsoll) he also agreed. Whether practical or not he could not say; but it was certainly desirable that men of science should direct their attention to the discovery of some means of obtaining special warning of the pressure of gas in mines. No doubt, also, what had been said by the hon. member for Newcastle (Mr. J. Cowen), as to atmospheric influence being of great importance in mining operations, was also correct. He would not trouble the House further, but he would only ask the hon. member for Stafford (Mr. Macdonald), after what had passed, whether he proposed to take a division on the subject? He had called the attention of the House to the matter, and had raised a debate which, he was sure, would be satisfactory to him and other hon. members interested in the subject. He must say that the object and intention, not only of the Government, but of the whole House, was to reduce the loss of life by these particular accidents; and by a division the hon. member would only throw an implied censure on those who were engaged in carrying out the working of the existing Acts. The hon. member might rest assured that, so far as he had anything to do with the Home Office, he would take care that the future regulations that might be made would be in the direction of those at present in existence, and that everything that was possible would be done to ensure the safety of life and property amongst those who were engaged in what must always be a most dangerous avocation.

MR. HUSSEY VIVIAN expressed the satisfaction he felt at the remarks which had fallen from the right hon. gentleman, the Home Secretary, in all of which he entirely agreed. The debate, on the whole, was the best he had ever listened to on the subject, showing, as it did, the practical knowledge of this important question possessed by many hon. members of the House. He did not at all wonder at the interest with which the House regarded the matter, because colliery accidents were of a terrible character; and if, by legislation, they could in any way suppress or reduce them to a minimum, the House ought certainly to adopt measures to bring about so desirable an end. For many years



he had taken part in every Committee and every Bill in reference to lessening these disasters, and it was certainly very pleasing to find, from the figures given by the right hon. gentleman, the Home Secretary, that the Acts which had been passed had conduced to the saving of so many lives. He believed more might be done by the stringent carrying out of the Mines Regulation Act. If, in future years, it should be found that other arrangements might be made for further reducing the loss of life, by all means let them be adopted. He must confess, however, that he could not agree with the suggestion made by the hon. gentleman, the Member for Derby (Mr. Plimsoll). The hon. member appeared to think that better chemical tests for gas in mines were required; but he (Mr. Hussey Vivian) would remind the House that the tests for gas were of the most delicate character. Anyone who, like himself, had seen gas tested in mines, could not but feel that this was the case; and, therefore, he did not think it would be of much use to look in that direction for an improvement. He entirely coincided with the remarks which fell from the hon. Member for Newcastle-on-Tyne (Mr. J. Cowen). He (Mr. Hussey Vivian) thought the House ought to turn its attention to insisting on a fund being provided for the support of widows and children of those who were killed by these terrible disasters; and he urged upon the Home Secretary the desirability of passing an Act with such a provision in it. He felt sure that employers as well as employed would gladly support any such measure, because it might be depended upon that so long as this most dangerous business was carried on, so long would they, from time to time, be liable to these frightful calamities. The great point, therefore, to be thought of was, if these calamities did occur, that those who were left destitute owing to them should not suffer in consequence of the loss of the bread-winners. Therefore, he impressed upon the right hon. gentleman, the Home Secretary, the necessity of adopting such a measure as had been shadowed forth by the hon. gentleman the Member for Newcastle (Mr. J. Cowen). Without entering into details, he must say that there could be no question that safety-lamps ought to be employed in every mine where gas existed. He had always caused them to be used in mines where he was interested, and he could safely say no practical difficulty had arisen therefrom. The question of blasting was certainly one of extreme difficulty. It was quite clear that the ordinary men ought not to be allowed to blast for themselves, and that special men ought to be told off to fire all shots. The absolute prohibition of blasting was a question of extreme difficulty; and before any rules could be laid down in such behalf, a great deal of consideration would have to be given to the whole subject.

In reply to the repeated solicitations of previous speakers, Mr. Macdonald rose and said:—

MR. SPEAKER: I do not know, Sir, if the forms of the House will allow me to make any remarks on the course I am about to pursue. If I am in order, I would just like to say, in answer to the honourable member for Wigan (Mr. Knowles), who says that my questions in respect to mine management are producing bad effect upon the managers and others in connection with the mines of this country, that I hold an entirely different opinion. I am well aware, and can give many instances of, that parties have expressed their fear, and have done their best to set things in order in consequence of these questions. I beg to assure him, and assure the House, that, so long as I have a seat in this House, so long as the constituency of Stafford honours me with their confidence in sending me as one of their representatives to Parliament, I will continue to put such questions, and continue remarks as I have hitherto done whenever I think the occasion requires it. (Hear, hear, from the Home Secretary.) I would consider myself guilty of a crime if I sat in this House and did not call attention to such matters at every moment I thought they required it. Now, as to the proposition made by the hon. Member for Newcastle, and his assumptions regarding mining accidents. His remarks would imply that most of these accidents arose from circumstances over which mine owners, mine managers, and workmen had no control. He does not speak with practical knowledge,

and I totally deny the conclusion he has arrived at. To say they could not be averted is to encourage the destruction of human life with our eyes open. I have shown the coroners' juries, and inspectors, who have the best means of knowing all the circumstances connected therewith, have arrived at a totally different conclusion. His proposition of a farthing on the ton, or whatever else it may require, I totally object to, although it received the support of the hon. Member for Glamorganshire. The effect of it would be, virtually, to encourage mine owners, mine managers, and others, to pursue a course of recklessness in management by which thousands of lives will be destroyed, and the families of the killed and injured thrown upon the public to maintain. I greatly prefer that the men should rely upon themselves, that they should be able, by their combinations and otherwise, to exact from their employers such wages, or such reward for their labour, as would enable them to extend their funds, whether for permanent relief or otherwise, to such an extent as that they could meet every case that might arise. Considering the recent action of the Home Secretary, and who, let me again repeat, I feel bound to say, he has done more to see the miners protected than anyone that has filled his place, with the exception of (Sir Geo. Cornwall Lewis,) a name I will ever mention with respect for what he did for the miners. Considering the promises he has made for seeing the Act strictly enforced, and believing that he will carry out those intentions he has expressed while occupying the office he does, I will not press the motion to a division at the present moment. I will reserve to myself, however, the right, if I should see it necessary this session, to proceed in the same direction, or during the next session to bring in a Bill to meet what I believe to be the requirements of the case. I will, Sir, with your leave, and with the leave of the House, under the circumstances, withdraw the motion. The motion having been withdrawn, the House resumed.

#### NOTE.

It will be observed that during the debate, the explosion of the Wood Pit, Haydock, was spoken of as a mystery. The evidence given by a large number of workmen dispel the bare thought of it being other than another disaster through neglect, added to the painfully long list—shall we say—criminal list. The evidence of the Inspectors, Messrs. Dickenson and Hall, left no doubt as to the cause. The jury, by their verdict which we here give, tell their opinion.

#### The verdict was—

"We believe there has been a fouling of air connected with an outburst or fall of roof, but by whom the gas was ignited there is no evidence to show. The explosion was caused by a faulty ventilation and by an accumulation of gas in goaves near Evan's place, which has been expelled from thence by a fall of roof, assisted by other fouling, which was known to exist previous to the explosion by the firemen and others."

#### The jury added the following recommendations:—

"There should be two firemen's reports, one for each shift, and that the ventilation should be in future carried out according to the wishes of the Government Inspectors. The jury think the lamp system is good, but requires better supervision, especially that the machine to fasten the lead rivets should not be left carelessly in the mine."

It will be seen that in the verdict there is a complete note of condemnation of the ventilation. The old lame duck, "*sudden out-burst of gas*," was well paraded by Mr. Peace—the solicitor for the owners. For the thousandth time, at least, was the fraud tried again. Messrs. Dickenson and Hall plucked every feather out of it though it was so well presented by experts, and eminent mining engineers.

## APPENDIX.

The following Table (I.) shows that the ratio of fatal accidents has diminished in each decade, in consequence of increased supervision, as the result of legislative enactment.

I.—DEATHS FROM ACCIDENTS IN COAL MINES SINCE 1850.

TOTALS, AVERAGES, ETC., ETC.—TABLE I.

PERIODS:	1851-60	1861-70	1871-80	1881	1882	1883	1884
From Explosions . . .	2,441	3,267	2,686	116	250	134	—
Yearly Average . . .	244.1	326.7	268.6	—	—	—	—
Falls of Roof, &c. . .	3,767	4,193	4,508	450	463	460	—
Yearly Average . . .	376.7	419.3	450.8	—	—	—	—
Shaft Accidents . . .	3,110	1,505	1,355	110	116	97	—
Yearly Average . . .	311.0	150.5	135.5	—	—	—	—
Miscellaneous, . . .	1,186	1,916	1,902	190	208	246	—
Under Ground . . .	—	—	—	—	—	—	—
Yearly Average . . .	118.6	191.6	190.2	—	—	—	—
Miscellaneous, . . .	505	775	898	83	84	108	—
Above Ground . . .	—	—	—	—	—	—	—
Yearly Average . . .	50.5	77.5	89.8	—	—	—	—
Total . . .	10,018	10,626	11,340	954	1,129	1,054	—
Yearly Average . . .	1,001.8	1,062.6	1,135	—	—	—	—
Total Employed . . .	2,460,322	3,192,305	4,821,839	195,477	503,937	514,933	—
Yearly Average . . .	246,032.2	319,230.5	482,183.9	—	—	—	—
No. Employed to one Death . . .	245	300	423	519	447	488	—
Ratio of Death to 10,000 . . .	4,072	3,328	2,353	1,925	2,234	2,017	—
En employed . . .	—	—	—	—	—	—	—

No letter testimony can be added, as to the value of Government inspection and statutory law, than the striking diminution in the ratio of deaths per 10,000 employed during the three decades above given.

This Table sets forth the causes of fatal accidents, and the number of deaths therefrom, 1870 to 1880.

II.—DETAILS OF ACCIDENTAL DEATHS, 1871 TO 1880, INCLUSIVE.

YEARS.	FROM EXPLOSIONS	FALLS OF ROOF.	SHIFT ACCIDENTS.	MISCELLANEOUS.		YEARLY TOTALS.	RATIO OF DEATHS PER 10,000 EMPLOYED.
				UNDER GROUND.	ABOVE GROUND.		
1871 . . .	269	435	123	176	72	1,075	2,310
1872 . . .	154	456	155	217	78	1,060	2,212
1873 . . .	100	491	171	221	86	1,069	2,079
1874 . . .	166	413	154	214	109	1,056	1,959
1875 . . .	288	459	172	227	98	1,244	2,321
1876 . . .	95	449	129	149	111	943	1,813
1877 . . .	345	438	129	187	99	1,208	2,443
1878 . . .	286	364	111	86	1,418	2,072	2,443
1879 . . .	184	426	120	172	71	973	2,040
1880 . . .	499	462	91	178	83	1,318	2,718
Totals . . .	2,686	4,508	1,355	1,902	898	11,340	—
Averages . . .	268.6	450.8	135.5	190.2	89.8	1,135	2,353

Besides the 2,686 deaths from explosions, not a few of those in column two follow from the same cause, the roof of the mine being often very much shaken, and the earth loosened, by the force of explosions.

This Table shows the ratio of deaths to output of coal during the same period as that covered by Table I.

III.—NUMBER OF DEATHS TO OUTPUT OF COAL AND AVERAGES.

PERIODS AND DATES.	TOTAL NO. OF TONS RAISED.	AVERAGE NO. OF TONS YEARLY.	TOTAL NO. OF DEATHS.	AVERAGE N.O. ANNUALLY.	NO. OF TONS TO ONE DEATH.
1851-60 . . .	648,735,749	64,873,574.9	10,018	1,002	61,744
1861-70 . . .	960,013,884	96,001,388.4	10,626	1,062.6	90,302
1871-80 . . .	1,809,016,742	180,901,674.2	11,319	1,135	114,451
1881 . . .	—	154,184,300	—	954	161,619
1882 . . .	—	156,499,977	—	1,126	152,161
1883 . . .	—	163,737,327	—	1,034	169,903
1884 . . .	—	16,044,175	—	—	—

## "SAFETY" LAMPS AND GUNPOWDER

The terrible record of disaster and death, so graphically epitomised by the late Alexander Macdonald, M.P. for Stafford, in his speech here reprinted, and in the startling figures given in the appendix show at what cost of human life that great factor in our industrial system—coal—is extracted from the bowels of the earth. But even the ghastly figures here given do not represent a tithe of the suffering and distress endured by our mining population.

The record given in the preceding pages is a record of death! The personal injuries caused by mining operations are not included in either list. It is computed that nearly 30,000 persons are more or less injured every year; thousands of cases the colliers are permanently disabled and frightfully mutilated, while many thousands more are temporarily disabled for a greater or less period of time.

The two chief causes of what may be termed preventable accidents in mines are defective lamps, and the use of gunpowder for blasting purposes. With the view of minimising the disasters and misery arising from those two causes I offered, in 1883, a prize of £500 for a perfect safety lamp. The result of the competition has been that a far better class of lamp has been generally adopted, and many disasters have thereby been prevented.

In consequence of the beneficial results of that offer and competition I am now offering a similar prize of £500 for a safe, efficient, and economical substitute for blasting by gunpowder, or other dangerous explosive. The correspondence with reference to the latter prize is here epitomised:

On February 27th, I wrote a letter to the Home Secretary with respect to shot-firing in mines, and I then intimated my intention of offering "a premium of £500 for a really safe and efficient substitute for gunpowder," through the Society of Arts, and I expressed a wish that the members of the Mines Commission should act as adjudicators.

To this letter the Home Secretary replied as follows:

"ELLIS LEVER, Esq.

"Whitehall, 11th March, 1885.

"Bowdon, Manchester."

"Sir,—With reference to your letter of the 27th ultimo, with enclosures respecting the offer which you propose to make of a premium of £500 for a safe and efficient substitute for gunpowder for blasting purposes in mines, I am directed by the Secretary of State to acquaint you that he is glad of your munificent intention, but he thinks that, as the Royal Commission on Accidents in mines will, it is hoped, soon report and be at an end, it would be better to adhere to your original intention as to the adjudication of the premium as intimated in the last part of your letter.—I am, sir, your obedient servant,

"GODFREY LUSHINGTON.

Acting in accordance with the suggestion of Sir William Harcourt, M.P., as contained in the above letter the matter is now left in the hands of the Council of the Society of Arts.

Bowdon, Manchester, March 28th, 1885.

ELLIS LEVER.

# INTENTIONAL SECOND EXPOSURE

## APPENDIX.

The following Table (I.) shows that the ratio of fatal accidents has diminished in each decade, in consequence of increased supervision, as the result of legislative enactment.

### I.—DEATHS FROM ACCIDENTS IN COAL MINES SINCE 1850.

TOTALS, AVERAGES, ETC., ETC.—TABLE I.

PERIODS:	1851-60	1861-70	1871-80	1881	1882	1883	1884
From Explosions . . . . .	2,411	2,267	2,686	116	250	134	—
Yearly Average . . . . .	244.1	226.7	268.6	—	—	—	—
Falls or Roof Acc. . . . .	3,767	4,103	4,504	450	468	490	—
Yearly Average . . . . .	376.7	410.3	450.4	—	—	—	—
Shaft Accidents . . . . .	2,119	1,505	1,355	110	116	97	—
Yearly Average . . . . .	211.9	150.5	135.5	—	—	—	—
Miscellaneous . . . . .	1,186	1,916	1,902	190	208	216	—
Under Ground . . . . .	—	—	—	—	—	—	—
Yearly Average . . . . .	118.6	191.6	190.2	—	—	—	—
Miscellaneous . . . . .	505	775	898	88	81	108	—
Above Ground . . . . .	—	—	—	—	—	—	—
Yearly Average . . . . .	50.5	77.5	89.8	—	—	—	—
Totals . . . . .	10,018	10,626	11,319	954	1,126	1,054	—
Yearly Average . . . . .	1,001.8	1,062.6	1,135	—	—	—	—
Total Employed . . . . .	2,093,322	3,192,005	1,821,809	199,477	563,987	511,993	—
Yearly Average . . . . .	246,032	319,240	482,183	—	—	—	—
No. Employed to one Death . . . . .	215	300	455	519	447	488	—
Ratio of Death to 10,000 Employed . . . . .	4.072	3.328	2.553	1.925	2.234	2.017	—

No better testimony can be adduced, as to the value of Government inspection and statutory law, than the striking diminution in the ratio of deaths per 10,000 employed during the three decades above given.

This Table sets forth the causes of fatal accidents, and the number of deaths therefrom, 1870 to 1880.

### II.—DETAILS OF ACCIDENTAL DEATHS, 1871 TO 1880, INCLUSIVE.

Y. ABB.	FROM EXPLOSIONS	FALLS OF ROOF.	SHAFT ACCIDENTS.	MISCELLANEOUS.		YEARLY TOTALS.	RATIO OF DEATHS PER 10,000 EMPLOYED.
				UNDER GROUND.	ABOVE GROUND.		
1871 . . . . .	269	435	128	176	72	1,075	2.310
1872 . . . . .	154	456	155	217	78	1,060	2.212
1873 . . . . .	100	491	171	221	86	1,069	2.079
1874 . . . . .	165	413	151	214	109	1,056	1.959
1875 . . . . .	288	439	172	227	98	1,244	2.321
1876 . . . . .	35	439	129	149	111	933	1.813
1877 . . . . .	345	438	129	187	99	1,208	2.443
1878 . . . . .	589	469	111	161	86	1,313	2.972
1879 . . . . .	184	426	120	172	71	973	2.040
1880 . . . . .	499	462	91	178	88	1,318	2.718
Totals . . . . .	2,686	4,508	1,355	1,902	898	11,319	—
Averages . . . . .	268.6	450.8	135.5	190.2	89.8	1,135	2.333

Besides the 2,686 deaths from explosions, not a few of those in column two follow from the same cause, the roof of the mine being often very much shaken, and the earth loosened, by the force of explosions.

This Table shows the ratio of deaths to output of coal during the same period as that covered by Table I.

### III.—NUMBER OF DEATHS TO OUTPUT OF COAL AND AVERAGES.

PERIODS AND YRS.	TOTAL NO. OF TONS RAISED.	AVERAGE NO. OF TONS YEARLY.	TOTAL NO. OF DEATHS.	AVERAGE N. O. ANNUALLY.	NO. OF TONS TO ONE DEATH.
1851-60 . . . . .	618,735,719	61,873,574.9	10,018	1,002	61,741
1851-70 . . . . .	960,015,884	96,001,588.4	10,626	1,062.6	90,302
1871-80 . . . . .	1,309,016,742	130,901,674.2	11,319	1,135	111,451
1881 . . . . .	—	154,181,300	—	94	161,619
1882 . . . . .	—	155,499,977	—	1126	152,161
1883 . . . . .	—	163,737,327	—	1,074	169,605
1884 . . . . .	—	16,344,175	—	—	—

## "SAFETY" LAMPS AND GUNPOWDER

The terrible record of disaster and death, so graphically epitomised by the late Alexander Macdonald, M.P. for Stafford, in his speech here reprinted, and in the startling figures given in the appendix show at what cost of human life that great factor in our industrial system—coal—is extracted from the bowels of the earth. But even the ghastly figures here given do not represent a tithe of the suffering and distress endured by our mining population.

The record given in the preceding pages is a record of death! The persons injured caused by mining operations are not included in either list. It is computed that nearly 30,000 persons are more or less injured every year; thousands of these the colliers are permanently disabled and frightfully mangled, while many thousands more are temporarily disabled for a greater or less period of time.

The two chief causes of what may be termed preventable accidents in mines are defective lamps, and the use of gunpowder for blasting purposes. With the view of minimising the disasters and misery arising from those two causes I offered, 1883, a prize of £500 for a perfect safety lamp. The result of the competition has been that a far better class of lamp has been generally adopted, and many disasters have thereby been prevented.

In consequence of the beneficial results of that offer and competition I am now offering a similar prize of £500 for a safe, efficient, and economical substitute for blasting by gunpowder, or other dangerous explosive. The correspondence with reference to the latter prize is here epitomised:

On February 27th, I wrote a letter to the Home Secretary with respect to shot-firing in mines, and I then intimated my intention of offering "a premium of £500 for a really safe and efficient substitute for gunpowder," through the Society of Arts, and I expressed a wish that the members of the Mines Commission should act as adjudicators.

To this letter the Home Secretary replied as follows:

"ELLIS LEVER, Esq.

"Whitehall, 11th March, 1885.

"Bowdon, Manchester."

"Sir,—With reference to your letter of the 27th ultimo, with enclosures respecting the offer which you propose to make of a premium of £500 for a safe and efficient substitute for gunpowder for blasting purposes in mines, I am directed by the Secretary of State to acquaint you that he is glad of your munificent intention, but he thinks that, as the Royal Commission on Accidents in mines will, it is hoped, soon report and be at an end, it would be better to adhere to your original intention as to the adjudication of the premium as intimated in the last part of your letter.—I am, sir, your obedient servant,

"GODFREY LUSHINGTON.

Acting in accordance with the suggestion of Sir William Harcourt, M.P., as contained in the above letter the matter is now left in the hands of the Council of the Society of Arts.

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